Food Packer

The National Magazine of Production and Management

CANNING GLASSPACKING FREEZING

A Vance Publication

July, 1956

Man-of-the-Month
Joseph Blumlein

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How Much Nitrogen for Corn? – Page 24

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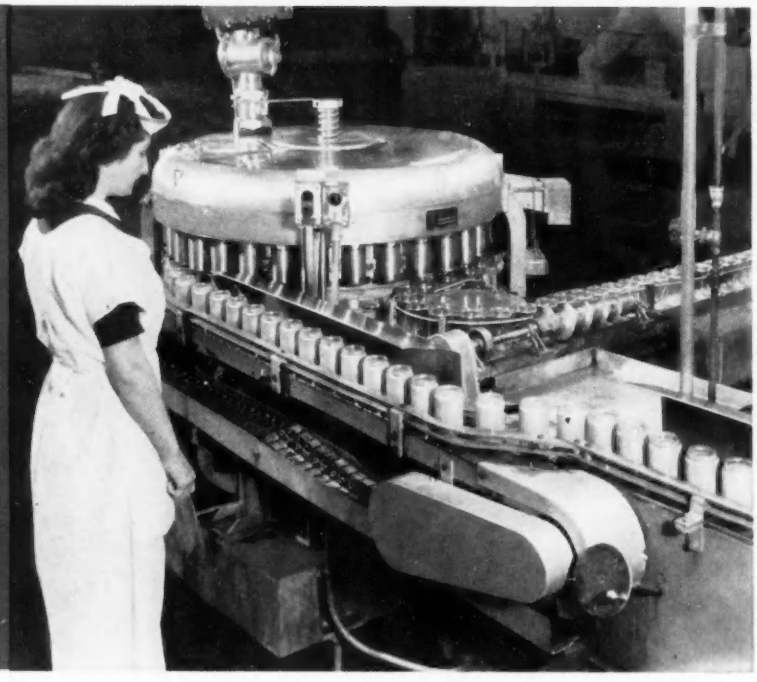
fmc

M&S

fillers



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M & S Fillers are easily adapted to fill all cans, jars, and even cartons. Speeds are limited only by the closer or capper. Endurance is a by-word with M & S Fillers: each of the eight basic models is precision-engineered for heavy duty, long life operation. Servicing is made easy and simple: all checking, lubrication and adjustment points are handy to reach. The fine quality and performance of M & S Fillers is assured through the use of special alloys and rigid factory inspection. And the exclusive FMC "No-can, No-fill" feature prevents spilling and waste.

By all comparisons, these are the finest fillers made—designed and built to perform better, longer and at lower cost.

New Filler Bulletin Just Off the Press!

This new FMC Bulletin completely describes the eight basic M & S Fillers in this famous line. Specifications and illustrations of all models are included, along with detailed explanations of accuracy, operation, and construction features. Various attachments are also described, as well as graphic illustrations of their application in handling a wide variety of products.

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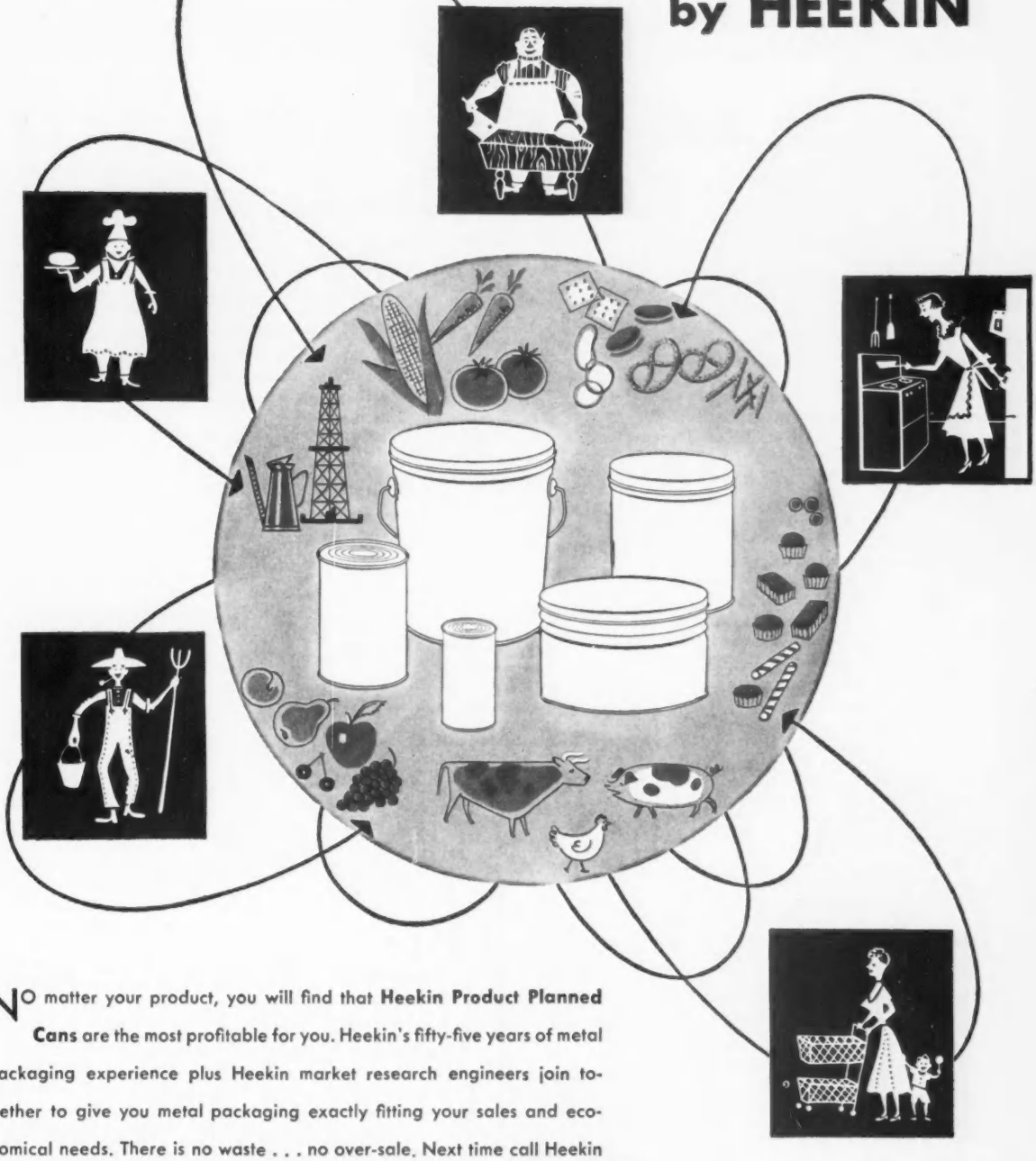
modern Product Planned Cans....
by HEEKIN



NO matter your product, you will find that **Heekin Product Planned Cans** are the most profitable for you. Heekin's fifty-five years of metal packaging experience plus Heekin market research engineers join together to give you metal packaging exactly fitting your sales and economical needs. There is no waste . . . no over-sale. Next time call Heekin and get the facts about Heekin's Product Planned Cans . . . **plain or lithographed** . . . planned for your product and planned for your profit.

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Using Salt Efficiently

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt

How to Find the Strength of Salt Brines—Accurately

In most of today's plants, the type of hydrometer called a Salometer can generally be used to measure the strength of salt brines most accurately. This device (similar in principle to the hydrometer which checks the condition of your car's battery) is convenient to use—and its scale permits fast calculations for a variety of plant needs. The Salometer scale reads from 0° in pure water to 100° in saturated brine, with each degree representing a percentage of fully saturated brine.

Using the Salometer with maximum accuracy, however, isn't just a matter of reading the scale. A number of simple precautions must also be taken to make sure the Salometer records correct brine strength. Here they are:

1. Check the temperature of the brine. Since most Salometers are calibrated for reading at 60° F., brine temperature should be kept at this level during testing. When other brine temperatures are encountered, it is necessary to use the following table of simple correction factors. These will help provide a completely accurate measurement of brine strength.

APPROXIMATE CORRECTION IN SALOMETER DEGREES

Observed Salometer reading	Subtract per degree below 60° F.	Add per degree above 60° F.
0 to 10	0.049	0.060
11 to 20	0.064	0.082
21 to 30	0.077	0.094
31 to 40	0.087	0.103
41 to 50	0.095	0.112
51 to 60	0.102	0.118
61 to 70	0.107	0.123
71 to 80	0.112	0.128
81 to 90	0.116	0.131
91 to 100	0.120	0.134

For measuring cold brines, such as those used in meat-packing plants, special 38° F. Salometers may be used. Special temperature-correction factors are available when using this type of Salometer to test brines above or below 38° F.

2. Brine should be tested only in a straight-walled cylinder made of clear glass—set on a level surface. Any moisture that collects on the outside of the cylinder should be wiped off before testing procedures start.

3. Salometer stem must be thoroughly dry, clean, and free from grease or caked salt crystals. Also, the Salometer should not touch the sides of the cylinder when readings are taken. It should be read with the stem in a vertical position.

4. Check new Salometers by placing them first in clear water; reading should be 0° S. Then empty the cylinder, rinse with a saturated salt solution, and refill with fully saturated brine; reading should be 100° S. Both water and brine should be at 60° F.

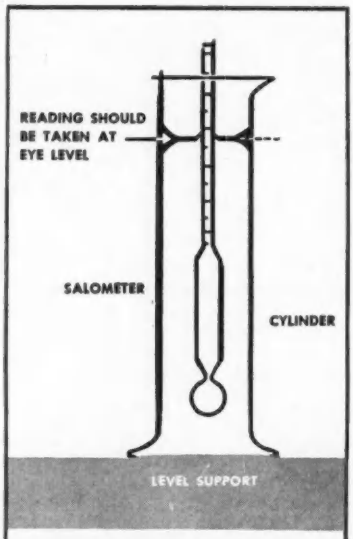

Illustration showing the proper eye level for reading a free-floating Salometer in a straight-walled glass cylinder.

5. Correct reading technique. Brine tends to rise along the sides of a glass cylinder, forming a concave surface known as a meniscus. For correct reading, the eye should be brought to a point level with the *bottom* of this meniscus. Errors of two or three degrees are possible if reading is taken at the point where the brine has risen along the sides of the cylinder.

Special Salometers. In the canning industry, where brine is used for quality grading, a different type of Salometer is often used. It's graduated on a scale where 100° S. represents brine containing 25% salt, instead of the normal 26.395%. Special hydrometers may also be used in the tanning or chemical industries. But the same procedures outlined here must always be followed when brine is to be tested—no matter what type of hydrometer a plant uses.

TECHNICAL SERVICE WITH YOUR SALT

Through skilled and experienced "Salt Specialists," International can help you get greater efficiency and economy from the salt or brine you use. International produces both Sterling Evaporated and Sterling Rock Salt in all types and sizes. And we also make automatic dissolvers in metal or plastic for both kinds of salt. So we can recommend the type and size of salt most perfectly suited to your needs.

If you'd like help on any problem concerning salt or brine—or further information on testing brine strength—contact your nearest International sales office.

International Salt Co., Scranton, Pa.
Sales Offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, Ohio; Cleveland, Ohio; Philadelphia, Pa.; Pittsburgh, Pa.; Richmond, Va.

FOR INDUSTRY, FARM, AND THE HOME—
STERLING SALT
PRODUCT OF INTERNATIONAL SALT CO., INC.

Food Packer

July 1956

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Events to Come

July 10-12. Western Packaging & Materials Handling exhibit, Pan Pacific Auditorium, Los Angeles.

July 11-20. Mold Count School, Purdue University, Lafayette, Ind.

July 13. Tri-State Packers Association, annual summer outing, Miles River Yacht Club, St. Michaels, Md.

July 19-20. National Kraut Packers Association, annual meeting, Catawba Cliffs Beach Club, Port Clinton, Ohio.

August 6-9. National Food Distributors, annual meeting, Hotel Sherman, Chicago.

August 21-24. Western Electronic Show and Convention, Pan Pacific Auditorium, Los Angeles.

Sept. 10-12. Packaging Institute, annual forum, Statler Hotel, Cleveland, Ohio.

Sept. 11-14. Packaging Machinery and Materials Exposition, Cleveland Public Auditorium, Cleveland, Ohio.

Oct. 17-19. National Pickle Packers Association, 63rd annual meeting, Edgewater Beach Hotel, Chicago.

Oct. 24-27. Florida Canners Association, 25th annual convention, Hollywood Beach Hotel, Hollywood, Fla.

Nov. 1. Illinois Canners Association, annual meeting, Bismarck Hotel, Chicago.

Nov. 7-8. Wisconsin Canners Association, annual convention, Schroeder Hotel, Milwaukee.

Nov. 8-9. Iowa-Nebraska Canners Association, annual meeting, Fort Des Moines Hotel, Des Moines, Iowa.

Nov. 14-16. Indiana Canners Association, fall convention, French Lick Sheraton Hotel, French Lick, Ind.

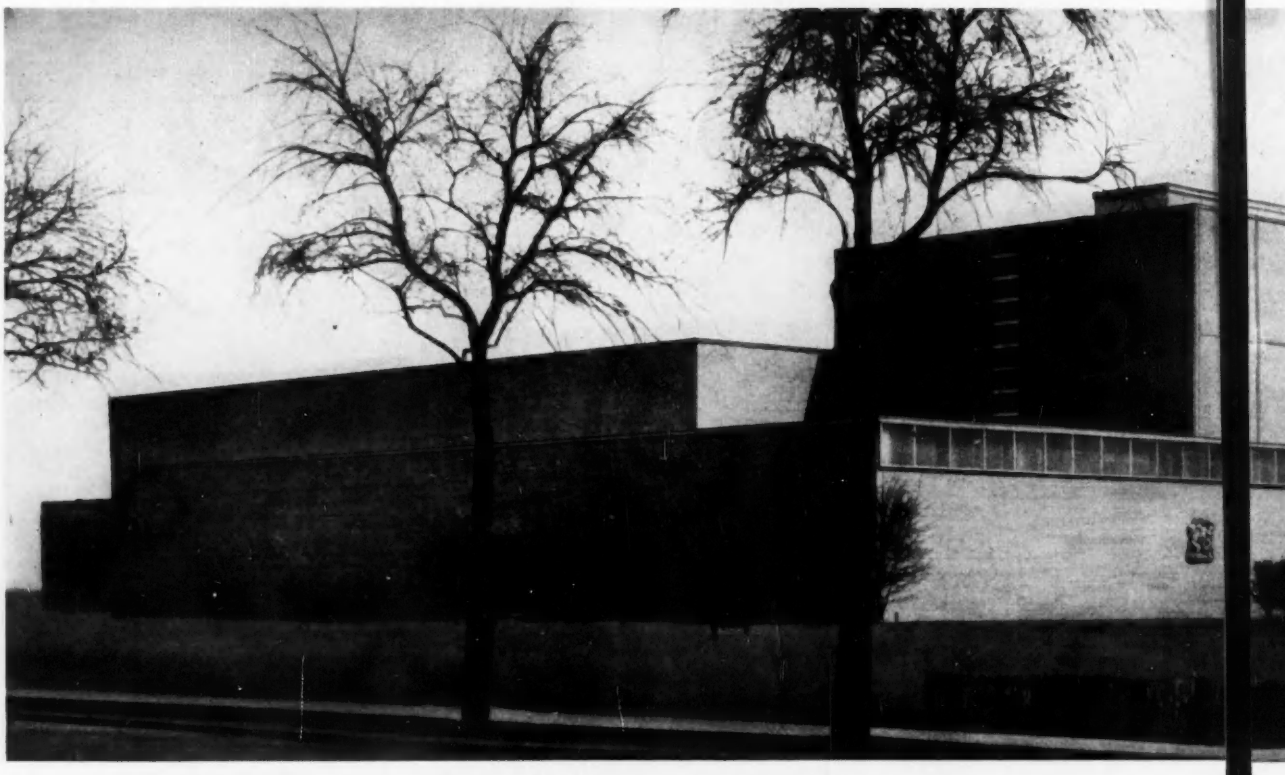
Nov. 18-19. Pennsylvania Canners Association, 42nd annual convention, Yorktowne Hotel, York, Pa.

Nov. 26-27. Ohio Canners Association, annual convention, Hotel Carter, Cleveland, Ohio.

Nov. 27-30. Vegetable Growers Association of America, annual convention, Grand Rapids, Mich.

Nov. 29-30. Michigan Canners & Freezers Association, fall meeting, Pantlind Hotel, Grand Rapids, Mich.

Dec. 13-14. New York State Canners & Freezers Association, 71st annual meeting, Statler Hotel, Buffalo, N. Y.



This is CONTINENTAL'S new

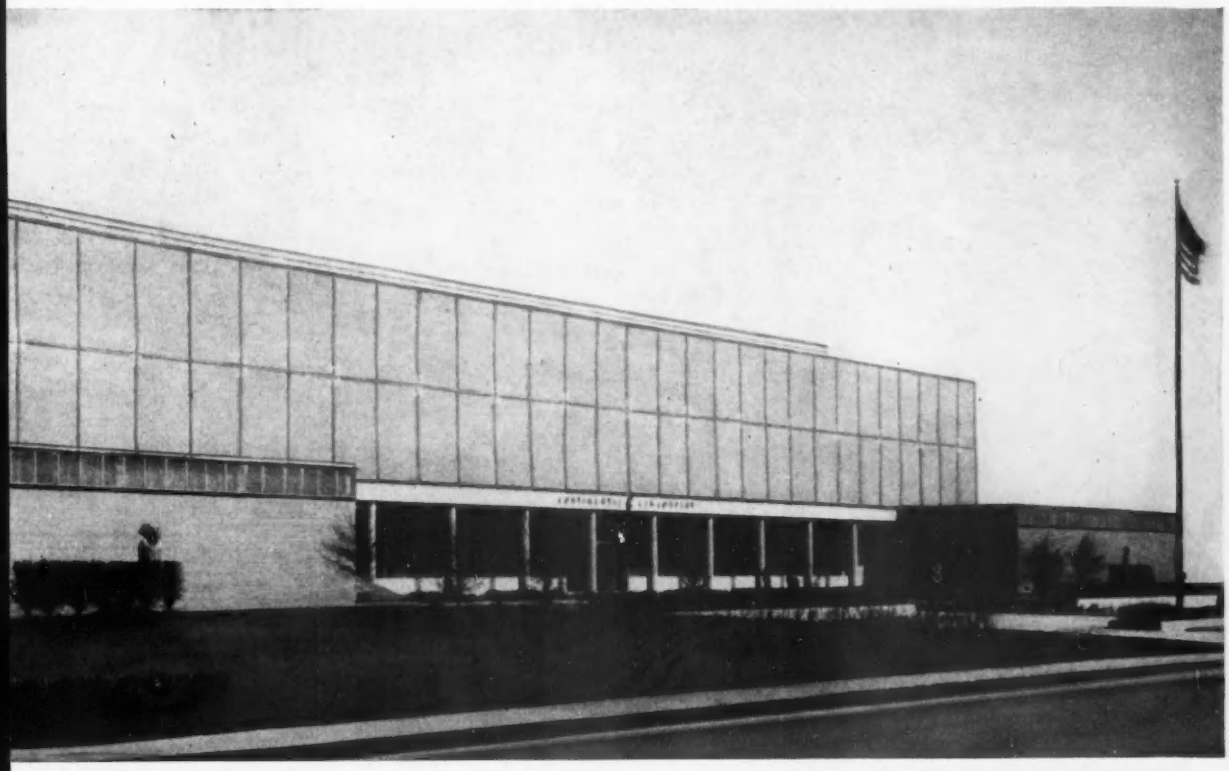
dedicated to the production of

The product of the handsome building pictured here will be more rapid improvement of cans and canning methods, for the immediate benefit of Continental customers.

This is the new multi-million-dollar research and development center of Continental's Metal Division, located in Chicago. It brings together under one roof 265 creative-minded scientists and engineers. With as many more technicians and assistants, they function as a closely knit team—in developing better materials, processes and machines—and in taking a fresh, new look at package design.

At their disposal are the most modern chemical, physical and engineering laboratories. Also contained in the 260,000 square feet of the center are complete pilot-plant facilities for checking out any individual proposal against considerations of cost, adaptability to present equipment, and good production practices.

Backing up the new center are other Metal Division laboratories at New York and Hayward, Calif., the Central Research and Development Division facilities in Chicago, which handle long-range experimental work, and 18 field laboratories across the nation.

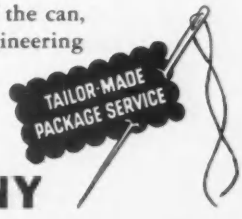


research and development center

better cans and canning methods

To all our friends who pack **FOOD...** *our doors and facilities are always open to you*

New developments in processed food containers will come to you faster than ever, now that our new Metal Division research and development center is working for you. Expect more ideas like our new cluster-beaded cans in #10, 46-oz., and #2½ sizes. Two sets of narrow bead clusters, placed equidistant from the top and bottom of the can, increase paneling resistance and axial load resistance. Look for more engineering advances like our 423 HCM—capable of closing up to 1200 cans a minute.



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Pacific Division: Russ Building, San Francisco 4

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Washington and You

Robert Y. Kerr, Washington Editor

New Customers Boom Baby Food Business

The baby food business is booming, naturally enough, considering the number of new customers. Last year grocers sold about $250 million worth of the foods. This equals two billion containers of three to eight oz. each.

The "convenience type demand," felt in the entire industry is hitting baby food. In this case it means a complete meal in one jar.

In addition to the baby and junior customers, a lot of adults who need bland diets, or whose teeth are not so good, are helping to dispose of this torrent of specially prepared foods. These products are also being used on puddings and ice cream. The chopped meats pack last year increased by 11 per cent; the custards and puddings pack rose by 40 per cent; and other chopped foods took a hop of 57 per cent.

Canned Apricot Standards

The United States Department of Agriculture has proposed revisions of grade standards for canned apricots. Current standards have been in effect since June 1945. Two styles of "Sliced" and "Mixed Pieces of Irregular Sizes and Shapes" are included in the proposals in addition to other styles which are commercially canned. Other proposed details cover quality evaluations for color, uniformity of size and symmetry, defects and character of fruit.

If you want the complete story apply to Press Service, Department of Agriculture, Washington 25, D. C., and ask for Number 1481.

Larger Acreages

Reports from the USDA indicate the 1956 planted acreage of nine vegetables for processing will be nine per cent more than last year. These are green lima beans, snap beans, beets, cabbage for kraut (contract acreage only), sweet corn, cucumbers for pickles, green peas, winter and early spring spinach and tomatoes. These crops usually account for about 93 per cent of the planted acreage of the 11 vegetables for processing covered in the regular program of reports.

Bug Battles

U. S. soybean and cottonseed oils find an expanded market in Europe, because of the low supply of olive oil. The crop in the Mediterranean area last year was ravaged by insects.

This recalls the fact that the Congressional appropriation to finance the Agricultural Department for the year starting July 1 carries a hefty sum to help stamp out the Mediterranean fruit fly outbreak in Florida. Broward and Dade counties in southern Florida were placed under quarantine in the middle of May. This quarantine requires that all fruits and vegetables and other products and articles likely to harbor the pest, if shipped interstate from the regulated counties, must have certification based upon treatment, inspection, or nonexposure to infection.

Adequate protection for the occasion . . .

but in the event of FIRE you need positive insurance protection

Food processing plants require specialized treatment for their insurance needs.

This calls for understanding, experience and "know-how" gained only through years of close co-operation with the entire industry.

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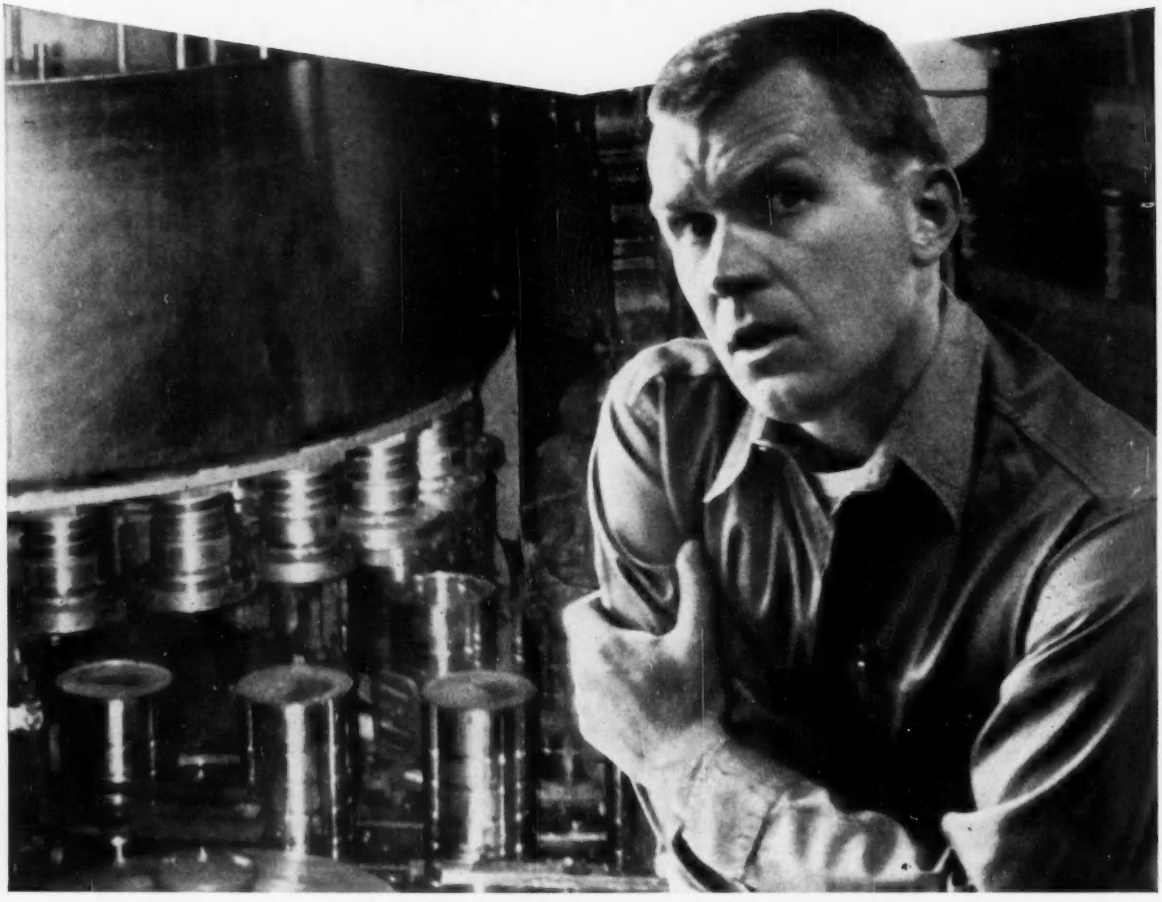
"There's so little salt in each can,

what's the difference what kind we use?"



Even a little bit of a certain kind of salt can make a big difference in quality and flavor

We mean Morton '999' Salt. It's a low price, premium grade salt entirely free from bitter calcium and magnesium compounds that can spoil flavor and downgrade product. '999' is always 99.9% pure, clean sodium chloride; exceptionally low in the objectionable trace metals, copper and iron.

You can do yourself a favor (and maybe save some money, too) by talking with a Morton Consulting Engineer about the various grades of salt and the salting methods Morton offers the food industry. The Morton Consulting Engineer also can help you with such problems as installing a water softening system, or modernizing or expanding a brine installation. There's no charge or obligation for any of these valuable services.

No matter what the size of your operation, you can count on Morton for help with any problem relating to salt.

For more information about the salt and service Morton offers the Food Industry, and your company in particular, write or wire:

MORTON SALT COMPANY
INDUSTRIAL DIVISION
Dept. FPa-7, 120 So. La Salle Street,
Chicago 3, Illinois

every old crow thinks her babe is Bee-u-tiful

"Mother-Love" sometimes, and quite naturally, rationalizes the poor sales behavior of a food product where flavor and eye appeal may be out-of-step with changes in consumer preferences.

It is important to know the truth about *your* product...it is just as important to know what to do about the truth! May we suggest "Better Check with STANGE and Be Sure."

The **WM. J. STANGE CO.**, *Manufacturers of Seasonings and Food Color, extends to the Food Industry a three-fold service involving Flavor and Color Improvement—Product Development —New Product Suggestions. Any or all three services are available through a Stange representative or by letter.*

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Industry Names and News

George B. Paulus

Alfred Funke, Jr.

George B. Paulus has been elected president of *Paulus Bros. Packing Company*, fruit and vegetable processing firm and subsidiary of *Dole Hawaiian Pineapple Company*. Mr. Paulus succeeds his brother, **Robert C. Paulus**, who is retiring.

Alfred H. Funke, Jr. has been elected to the board of directors of the *P. J. Ritter Company*, Bridgeton, N. J.

Keith Burr has resigned as assistant secretary of the *National Association of Frozen Food Packers* to join the *Minute Maid Corporation*, with headquarters in Orlando, Fla.

Frank O. Linehan has been named assistant general manager of the *Aron Canning Company*, Stockton, Calif.

The *ReaLemon - Puritan Company*, Chicago, has acquired a Florida lime processing plant formerly operated by the *Florida Tropical Fruit Growers Association*. The plant, located on the south campus of the University of Miami, is incorporated as the *ReaLime Division, Inc.*

Curtiss C. Mitchell has been named district manager for all *Durkee Famous Foods* packaged product sales in the northern and central portions of Ohio, as well as eastern Indiana and southern Michigan. *Betzold & Buckingham, Inc.*, Cleveland broker, has been named to handle sales of Durkee packaged products in the northeastern Ohio area.

R. Dal Mills, formerly district manager in the Carolinas for *John H. Dulany & Son, Inc.*, has been promoted to field sales manager, frozen foods. **L. Alex Lineberger** succeeds Mr. Mills in his former position.

L. E. Felton, vice-president (finance) and treasurer, *Green Giant Company*, has been elected a vice president of the *Controllers Institute of America*, effective September 1. **W. T. McGillivray**, controller, *California Packing Corporation*, was elected a national director of the Institute.

College Inn Foods Products Corporation has purchased the *Vincennes Packing Corporation*, including the Lockport, N. Y. plant. The new purchase will be known as College Inn Lockport Company, Inc. It does not include the Indiana plants that were taken over by the *Killion Canning Company, Inc.*, which will operate under the name of the *Vincennes Packing Corporation*.

Dow Chemical Company's St. Louis sales office has occupied new quarters in a recently completed office building in surburban Clayton.

Borg Hanson

Thomas E. Hatch

Borg Hanson has been appointed *Marathon Corporation's* frozen foods packaging sales representative in the Chicago area.

Thomas E. Hatch was recently named advertising and merchandising manager of *The Larsen Company*, Green Bay, Wis.

Dr. John J. Birdsall, food technologist, has joined the laboratory staff of the *Wisconsin Alumni Research Foundation*. He will specialize in flavor evaluation.

William E. Carey has been appointed vice president and director of sales for *Ocoma Foods Company*, division of *Consolidated Foods Corporation*.

Chun King Sales, Duluth, Minn., has purchased a modern building and 11-acre site in Jackson, Ohio, as part of a long-range expansion program.

Expanding its New York sales office, *Hazel-Atlas Glass Company* has taken occupancy of the entire eighteenth floor of 415 Madison Avenue at 48th St. for its sales force.

J. H. McNash has been elected chairman of the board and president of *Hazel-Atlas Glass Company*.

Merrill A. Grogel has been appointed general manager of the products division of *Cochran Foil Company*.

Mah Chena, founder and president of the *Mah Chena Corporation*, Chicago processor of frozen Chinese foods, died April 25 in Chicago. He was 58 years of age.

Campbell Soup Company has been singled out in the 1956 *Manual of Excellent Managements*, published by the *American Institute of Management*, for its carefully planned and fruitful research and development activities.

W. Kyrel Meschter has resigned as president of the *National Preservers Association*.

Indian Trail, Incorporated is the new name of the Wisconsin marketing organization formerly known as *Cranberry Growers, Incorporated*.

Mortimer B. Fuller, Jr. has been elected vice president and treasurer of the *International Salt Company, Inc.*

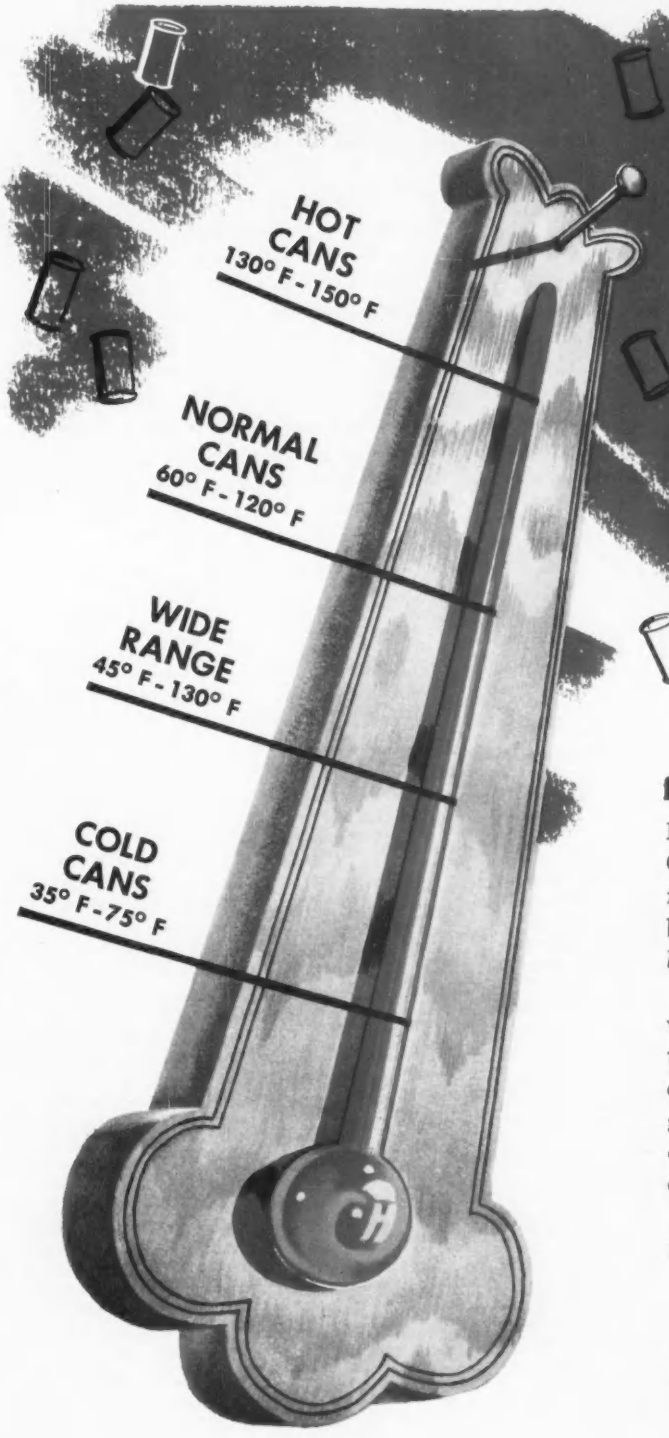
J. V. Carlson has assumed the position of manager of Industrial Relations for the Pacific Metal Division of *Continental Can Company*, replacing **J. R. Roberts** who has been appointed assistant manager at Continental's clearing (Chicago) plant.

A. Wesley Rae has been appointed eastern divisional manager of *Fishery Products, Incorporated*, Cleveland, packer of Blue Water Seafoods.

Warren B. Reese has been elected vice president of the *Macbeth Corporation*, Newburgh, N. Y.

A. Wesley Rae

Warren Reese



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SWIFT'S PICK-UP GUM

for every Canning Temperature!

They're resin-based for quick tack at high speeds

Built for speed, Swift's new Pick-Up Gums come in convenient chunk-form for quick melt down. They're resin-based, strong on tack, non-foaming and *long* on mileage economy.

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For the food processor who prefers to blend his own seasoning materials, D&O offers a complete line of high quality essential oils, guaranteed as to uniformity and dependability.

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D&O has manufactured, for many years, a very complete line of oleoresins, which are made by a special process assuring the retention of the high quality of their respective raw materials. Concentration and aroma of the finished products are so controlled that absolute uniformity of consecutive deliveries is guaranteed.

SPICEOLATE® SEASONINGS . . .

Water soluble spice extractions made from pure natural oils and oleoresins, the SPICEOLATE LINE is excellent for seasoning products containing a high percentage of water, such as pickles, catsup and other condiments. A low vapor pressure makes their use advantageous in processes where high temperatures are required. Available in Natural Oils, Mixed Natural Oils and Special Mixtures.

SPISORESIN® SEASONINGS . . .

Special extractions of natural spices, which possess all the flavoring qualities and values of the original material SPISORESIN SEASONINGS produce a finer, more uniform flavor than can be obtained with dry spices and are more economical to apply and handle. Even-spreading, pourable, of uniform strength, properly balanced and free from bacteria molds and yeast spores, they meet all the requirements of the Bureau of Animal Industry. Available in BASIC and COMPOUND form.

SPISORAMA® SEASONINGS . . .

Dry soluble spice seasonings, especially designed for the canned food processor, sausage maker or meat packer. In the manufacture of dry solubles, all the active flavoring elements are distilled from natural spices and prepared in various dry carriers in strength and mixture desired, so as to be ready for instant use by the food processor. Full utilization of flavor is obtained immediately after processing. To the catsup packer SPISORAMA SEASONINGS offer freedom from the problem of "black neck". . . the salad dressing manufacturer gains a creamy white product free from specks. SPISORAMA SEASONINGS have standardized flavor values . . . the cost of maintaining control checks is eliminated. Available in basic soluble spices and in any desired compound mixture.

Essentially for You

D&O ESTABLISHED 1798 ®

Ask for the Spiceolate, Spisoresin, and Spisorama Brochures, and the Essential Oil Catalog.

Our 157th Year of Service

DODGE & OLCOTT, INC.

180 Varick Street, New York 14, N. Y.

Sales Offices in Principal Cities

ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES • FLAVOR BASES • DRY SOLUBLE SEASONINGS

Spotlighting the NEWS

Canco Plans to Combat Rising Steel Prices

A $27 million expansion program was announced last month by the American Can Company to meet the rising costs of steel.

The program, announced by William C. Stolk, president, on June 11, would in effect allow American Can to take over part of the processes now being done by the steel companies.

The reason for the move, Stolk said, was the basic competition between tin-plating and many other types of packaging materials. He said that the steel industry has warned of higher prices coming.

Since the end of the war steel prices have increased 91%. Prices of No. 2 cans increased 75% during the same period.

With the new processes will come savings. "We will perform these operations in our own plants, instead of having the steel mills perform them at their cost plus a profit," Stolk said.

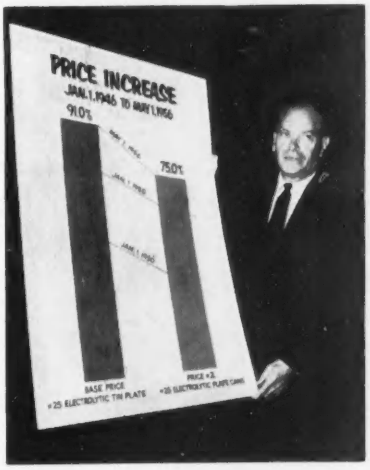
Immediate plans include processing steel and tin plate in coils rather than in the pre-cut sheets. A new 200,000 sq. ft. plant will be built in the Chicago area. New equipment will go to plants in Oakland, Cal.; Tampa, Fla.; Baltimore, Md.; Los Angeles, and other locations.

The next step will be to install equipment for chemically treating black plate to produce tinless cans. Stolk said that there is a growing use of tinless steel plate in can manufacture.

Still in the future, but included in the planning, is the continuous operation of the processing steps. With enameling units all the steps – inspecting, chemical treating, enameling, sorting and stacking – will be one continuous operation.

The strip enameling machines are not included in the present appropriation.

Stolk said, "The program is calculated to help overcome the tin plate cost vise we are caught in at the present time, but we regard it as only the beginning. This project, together with our recent container developments, embarks us on a course that within the next few years will completely revolutionize can-making."



William C. Stolk, Canco president, points to the chart showing 91% increase in steel prices compared with a 75% increase in can prices since 1946.

Continental Opens Lab; Plans Glass Merger

Continental Can Company opened a new $7 million laboratory for research and engineering in Chicago on June 14.

The new Research and Development Center is the largest and most advanced under one roof in the can-making industry, T. C. Fogarty, Continental president, said.

Mr. Fogarty outlined the problems which will be tackled by the 265 scientists and technicians in the new laboratory.

1. New metal containers and non-metal components will be studied. These would include blends of materials such as steel and plastics, or steel and fibre in a single container.
2. More efficient, high speed can-making and can-closing machinery are also major goals to help reduce unit prices on cans.
3. New products suitable for packaging in metal and related materials will be developed. Mr. Fogarty predicted that the greatest growth in metal container production over the next decade would come from such products not previously packaged in metal containers.

Included in the equipment of the massive new laboratory are a can-making pilot plant and a self-contained can-closing line. Conditions in any can-making factory or canning plant can be duplicated.

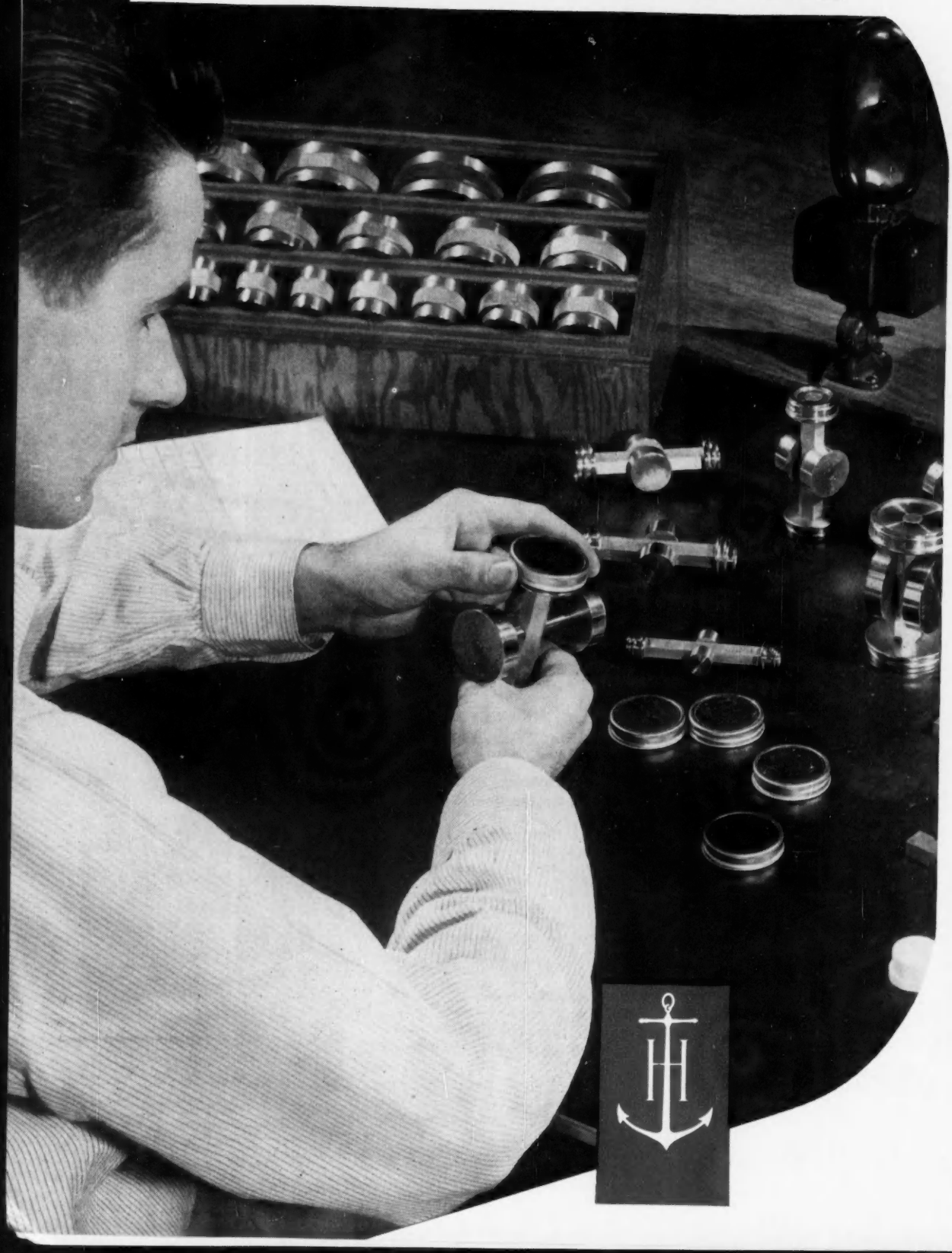
Plans for the merger of Continental Can Company, Inc., and Hazel-Atlas Glass Co. have been approved by the boards of directors of both concerns. Approval must still come from stockholders of Hazel-Atlas at a special meeting expected to be called some time in August.

The managements of the two companies consider the consolidation a logical step in the development of broad diversification in the packaging field.

Continental has not been in the glass container business. However, it is an important producer of metal containers. It also manufacturers fiber drums, paper containers, bottle crowns and caps, and other packaging products.

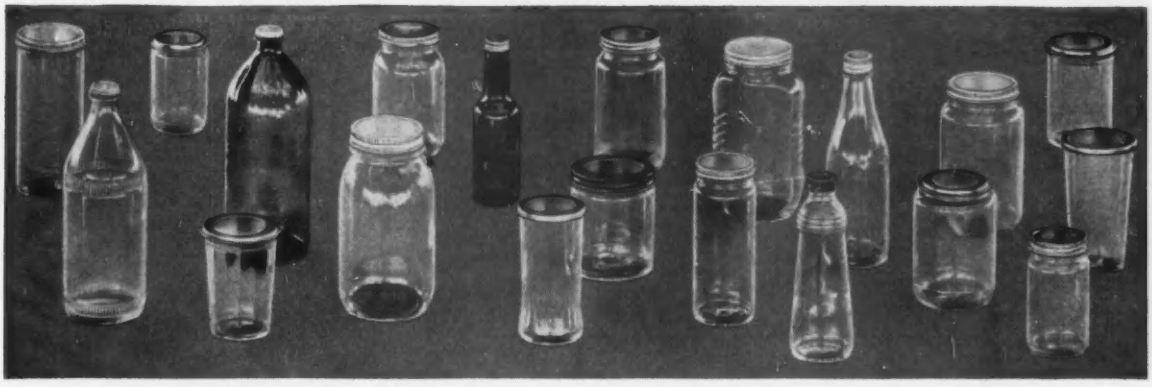
Included in the equipment in the Continental Can Co., Research and Engineering Center are these "thermal death time retorts."

CONTROL IS

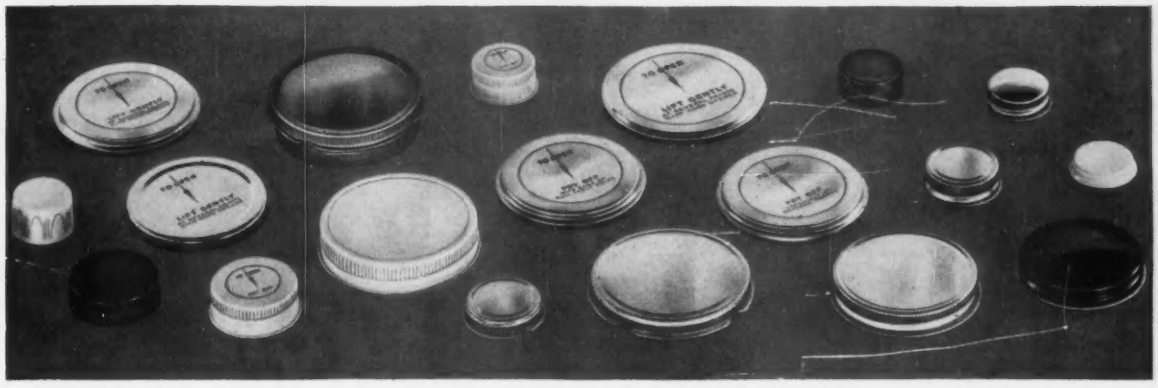


ALL-IMPORTANT

with Anchor Hocking!



Regardless of what you pack Anchor Hocking makes an Anchorglass container in a style, size and color to most attractively, efficiently and economically package it. And regardless of how you pack it—hot or cold—with or without vacuum, sterilized or processed, there's an Anchor cap and Anchor sealing machine to completely satisfy your diverse and specialized requirements.



THE controls applied throughout your production and packaging operations are all-important to you. By the same token, the manufacturing controls employed by Anchor Hocking are very important to you, also.

Anchor Hocking exercises literally hundreds of exacting controls, tests and checks daily in the manufacture of its glass containers and closures. From the selection of all raw materials used to the final inspection, every operation is under meticulous control.

And all of this control, involving highly trained chemists, bacteriologists, engineers, other technicians and personnel, is done but for one reason. And that is, to provide you with uniform, high quality, dependable Anchorglass® containers and Anchor® screw, lug, vacuum, metal and molded closures that will give you high-speed, dependable production and protection.

ANCHOR HOCKING

GLASS CORPORATION *Lancaster, Ohio*

Insure Uniform Quality Cooking

DOUBLE-CHECK with COOK-CHEX

The Easy-To-Use Cooking Indicator Tag

When a Cook-Chex is attached to a retort basket... *Anyone* in your plant can double check, at a glance, *two important* facts!

1. **The basket has, or has not, been through the cooking process.**
2. **It has, or has not, been subjected to *proper* cooking conditions.**

These two facts are important to you because they eliminate the usual problems of: a wrong cook schedule, keeping baskets in sequence, and the possibility of "losing" uncooked baskets!

Easy-to-use Cook-Chex signal these essential facts automatically! Cook-Chex, produced with a *purple* chemical ink, turn color to *green* only after your proper cooking conditions have been achieved. Cook-Chex react to precise conditions of temperature, steam and time; and, may be ordered to meet your specific cooking requirements.

Cook-Chex are also excellent as a low cost, permanent record for your cooking-room operations.

Double-check with Cook-Chex to insure uniform quality in your food products. Send for supply of Cook-Chex samples.

ATI COOK-CHEX

Another product by ASEPTIC-THERMO INDICATOR COMPANY

Aseptic-Thermo Indicator Company
11471 Vanowen St., North Hollywood, Calif.

Please send a FREE supply of Cook-Chex for use with a cooking process of _____ degrees F., for _____ minutes. FP-7

Name_____

Position_____

Company_____

Address_____

City_____ Zone____ State_____

Apple Growers Plan Bargaining Group

A new association is underway.

The Appalachian Growers Processing Apple Association was formed at a preliminary organizational meeting at Martinsburg, W. Va., on June 2. The group is now asking growers for their "intent to join."

The new association which elected E. Blackburn Moore of Berryville, Va., chairman, will attempt to obtain "reasonable prices for processing apples, consistent with market conditions."

The next step will be formal organization and incorporation. Then a sign-up of membership. Mr. Moore said that the association can help both growers and processors through more stable markets.

Higher Costs Ahead

As the weather changed from the cold mugginess of a late, late spring to blistering hot days in June, canners looked forward to a bigger season – but not without troubles, high among them rising production costs.

The Hawaiian Pineapple Company announced increases of 4 to 7% this year. E. B. Woodworth, Dole vice-president and general sales manager, said, "The increases will partially restore juice prices to January 1955 levels."

Maine sardine canners looked for increases in wage levels as one effect of the increase in minimum wages from 75 cents to $1 an hour. A Rochester, N. Y., auditing firm figured increases of 15% for direct labor costs.

The Pennsylvania Canners Association estimated increased costs for producing the finished product would range from 5 to 10% for peas to 30% for mushrooms.

Safety Contest

The Wisconsin Canners Association is sponsoring a safety contest among member canners. A leaflet will be available for distribution to employes, calling their attention to the contest. It is designed to make all cannery workers more safety conscious.

The leaflets and posters are supplied by two insurance companies at the request of the association's safety committee. The contest was announced by A. L. Sveom of Fall River, Wis., chairman of the committee in June.

Crystals for Retail

Instant orange juice crystals are being shipped to Sweden for retail use. The 4 oz. retail can makes one quart of juice.

Until now the crystals have been available only in 1 lb. cans for institutional use.

W. E. G. Gallwey, president of Orange Crystals, Incorporated, Plant City, Fla., said that the shipment to Sweden consisted of 1,000 cases of orange crystals and 625 cases of grapefruit crystals. Special labels printed in Swedish were used to make it easy for the Swedish housewife to prepare the juice.

Statewide Canning Label?

Members of the Pennsylvania Canners Association were urged to create a label for use on Pennsylvania-grown products which are marketed locally. Edward J. Rinaud, New York food broker, made the proposal at the annual sales clinic of the association held in Mt. Pocono, Pa., in May.

"It seems a natural development that the Pennsylvania canners as a group could establish a brand that will identify the product as having been grown and produced in Pennsylvania and establish a fund which would be sufficient to start a local advertising campaign in some of your nearby markets," he said.

Cannery Job Testing

Tests to select prospective workers for canning jobs have been developed by the Wisconsin State Employment Service, Marvin P. Verhulst, executive secretary of the Wisconsin Canners Association, reported.

The tests can measure an applicant's ability to learn the jobs of corn husking machine operator, corn cutting machine operator, pea sorter or inspector and trimmer.

The testing procedures were developed with the cooperation of the Friday Canning Company, Green Giant Company, Mammoth Spring Canning Company, Oconomowoc Canning Company, and the Rich-land Canning Corporation. They will be administered by the State Employment Service but only in the selection of new employees.

More of the Dollar

The part of the U. S. food dollar spent for canned foods will increase over the next 10 years, according to wholesale and retail grocers.

In a survey conducted by Don White, Inc., for the National Canners Association, 64% of the wholesalers and 44% of the retailers reported they believed canned foods' share of the food dollar would be as big or even bigger in 10 years.

A majority of the wholesalers expected to use extra promotion for their private brands.

"ALL HANDS APPROVE"

Your production man approves because Hazel-Atlas quality control is geared to mesh with yours. Light weight, delicate looking, glistening H-A containers are tough on the production line and easy to handle.

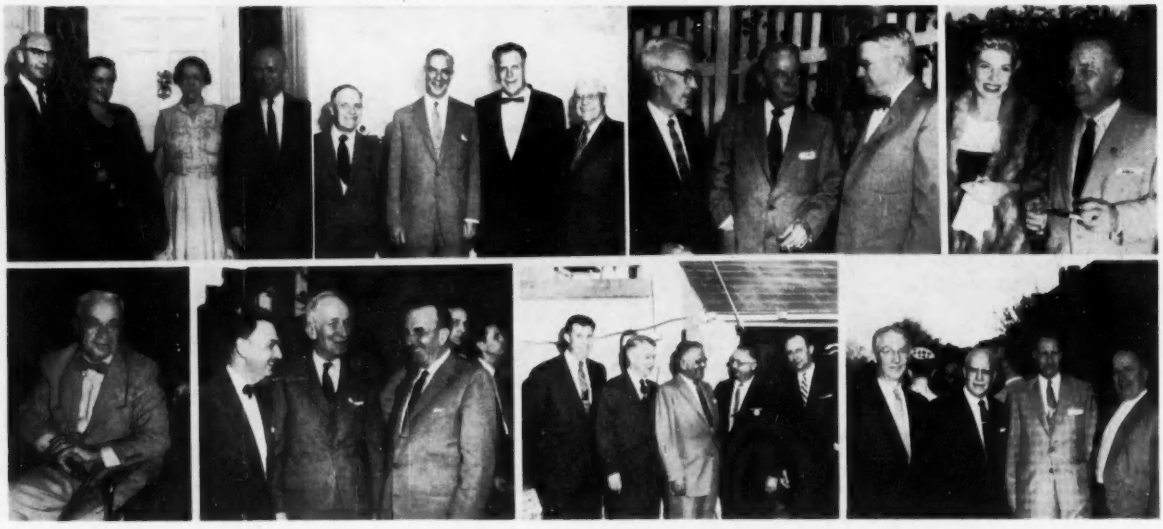
Dealers approve because every H-A glass package makes for easy display with shelf appeal that means sales.

And, most important of all, consumers approve, for each H-A container and closure is designed with the home maker in mind. She appreciates a beautiful package with its visual inventory.

H-A ALWAYS MEANS

HOME APPROVED

HAZEL-ATLAS GLASS COMPANY WHEELING, W. VA.



The lawn party of Mr. and Mrs. Carlos Campbell was well attended. Guests above are listed at the end of the article.

NCA Board Hears:

Progress in Selling Canned Foods

How the National Canners Association is helping its members sell more canned foods received major attention at the recent meeting of the NCA board of directors.

The meeting was held in Washington, May 18 and 19.

NCA president William U. Hudson of Gerber Products Co., in introducing a series of promotional presentations, said, "These programs fall into two general categories: First, those that are directed at the consuming public to stimulate more purchases of canned foods, both from regular customers and by creating new customers; and second, programs that will supply the canners with information that will enable them to do a more effective and intelligent job in their own selling programs."

In the first of these reports, C. Meryl Sullivan, NCA director of labeling research, outlined labeling from the standpoint of state relations, consumer education, purpose and distributor relations.

Reporting on the Consumer and Trade Relations Committee, Norman Sorenson of Country Gardens, Inc., committee chairman, explained that the trade relations phase picks up where the publicity campaign leaves off.

After a resume of the committee's aims, Mr. Sorenson concluded, "It is hoped that our work, together with . . . . the advertising and promotion programs . . . . will induce the consumer to enter the grocery store in a frame of mind that will encourage her to seek out the canned foods that have been so glowingly described through this program."

George Anderson of Dudley-Anderson-Yutzy reviewed developments and accomplishments to date under the NCA Consumer and Trade Relations Program. This well-timed program was launched early in 1954 and was intended to tell the prestige story of canned foods. Adopted as the program's slogan was, "Take advantage of canned foods' built-in maid service and add the creative touch."

Other presentations at this session of the directors' meeting included a report on the NCA Statistics Division activities related to marketing, by Dr. H. L. Stier, division director; and a report of the Consumer Service Division, by E. B. Woodworth, Hawaiian Pineapple Co., Ltd., acting chairman of the Consumer Service Committee.

Meeting in conjunction with the NCA directors were the officers and official boards of the Canning Machinery and Supplies Association and the Forty Niners. The groups studied their affairs and outlined their activities for the coming year, including the 1957 convention and the golden anniversary celebration of the National Canners Association next year.

Other Board action during the two-day meeting included:

Election of Henry W. Hartle of Owatonna Canning Co., Owatonna, Minn., and Shell R. Clevenger of Bush Brothers and Co., Dandridge, Tenn., to vacancies on the Executive Committee.

Authorization of a review by a committee of scientists representing NCA and CMI of new methods for determining nutrients in canned foods, new information and improvements in canning techniques.

The lawn party for board members, industry spokesmen and guests, given by Mr. and Mrs. Carlos Campbell at their home in nearby Arlington, Va., was well attended.

In the pictures above, top row from left are: NCA President and Mrs. William U. Hudson and Mr. and Mrs. Campbell. Lowden Jones, Walla Walla Canning Co.; Reubin L. Perin, Continental Can Co.; E. E. Willkie, Pacific American Fisheries, Inc.; and Marc Hutchinson, Michigan Fruit Canners, Inc.

Cliff Wilson, Food Machinery and Chemical Corp., president of the Canning Machinery and Supplies Association; H. F. Krimendahl, president of Stokley-Van Camp, Inc.; and John Swift, White Cap Co. Mr. and Mrs. David S. Nay. Mr. Nay, W. J. Stange Co., is president of the Forty-Niners.

From left second row is John F. McGovern, Green Giant Co., and 1949 president of the National Canners Association. Glenn Knaub, P. J. Ritter Co.; Maj. Gen. Carl A. Hardigg, U. S. Army (ret.); and William Ritter, P. J. Ritter Co.

Jack Morrison, S. M. Hopkins and Robert S. Solinsky, all of National Can Co.; William A. Free, Hungerford Packing Co.; and Alan Warehime, Hanover Canning Co. W. D. "Don" Jones, Illinois Canners Association; Henry Hartle, Owatonna Canning Co.; Ed Elmer, Minnesota Canners Association; and Joe Weix, Oconomowoc Canning Co.

Protect Color
and flavor!
FROZEN PEACHES
Frozen CHERRIES
FROZEN APPLES
Use Pfizer Ascorbic Acid or Ascorbic-Citric Mixture to protect your bulk frozen fruits—peaches, cherries, apricots, apples.

It costs surprisingly little* to keep your frozen food packs looking fresh and tasting fresh . . . to give them greater sales appeal with . . .

PFIZER ASCORBIC ACID. In fruits, ascorbic acid controls the oxidation that causes browning and flavor loss. A small amount of ascorbic on fish will check "rusting" of the fatty portion that results in off-taste. Write for Technical Bul'etins No. 28 (frozen fish) and No. 70 (frozen fruit) for helpful information on how to use Pfizer Ascorbic Acid in your processing . . . to **protect your sales!**

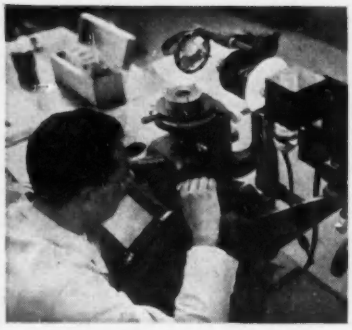
*A fraction of a cent per pound.

CHAS. PFIZER & CO., INC., • *Chemical Sales Division* • 630 Flushing Ave., Brooklyn 6, N. Y.

Branch Offices: Chicago, Ill.; San Francisco, Calif.; Vernon, Calif.; Atlanta, Ga.; Dallas, Texas

Manufacturing Chemists for Over 100 Years **Pfizer**

OWENS-ILLINOIS ASSURES YOU A



Co-ordinated Research

Pure research into formulae and fabrication of glass, *packaging research* into processing and handling methods in customer plants, and *market research* into consumer attitudes, add up to greater specific value for your packaging dollar.

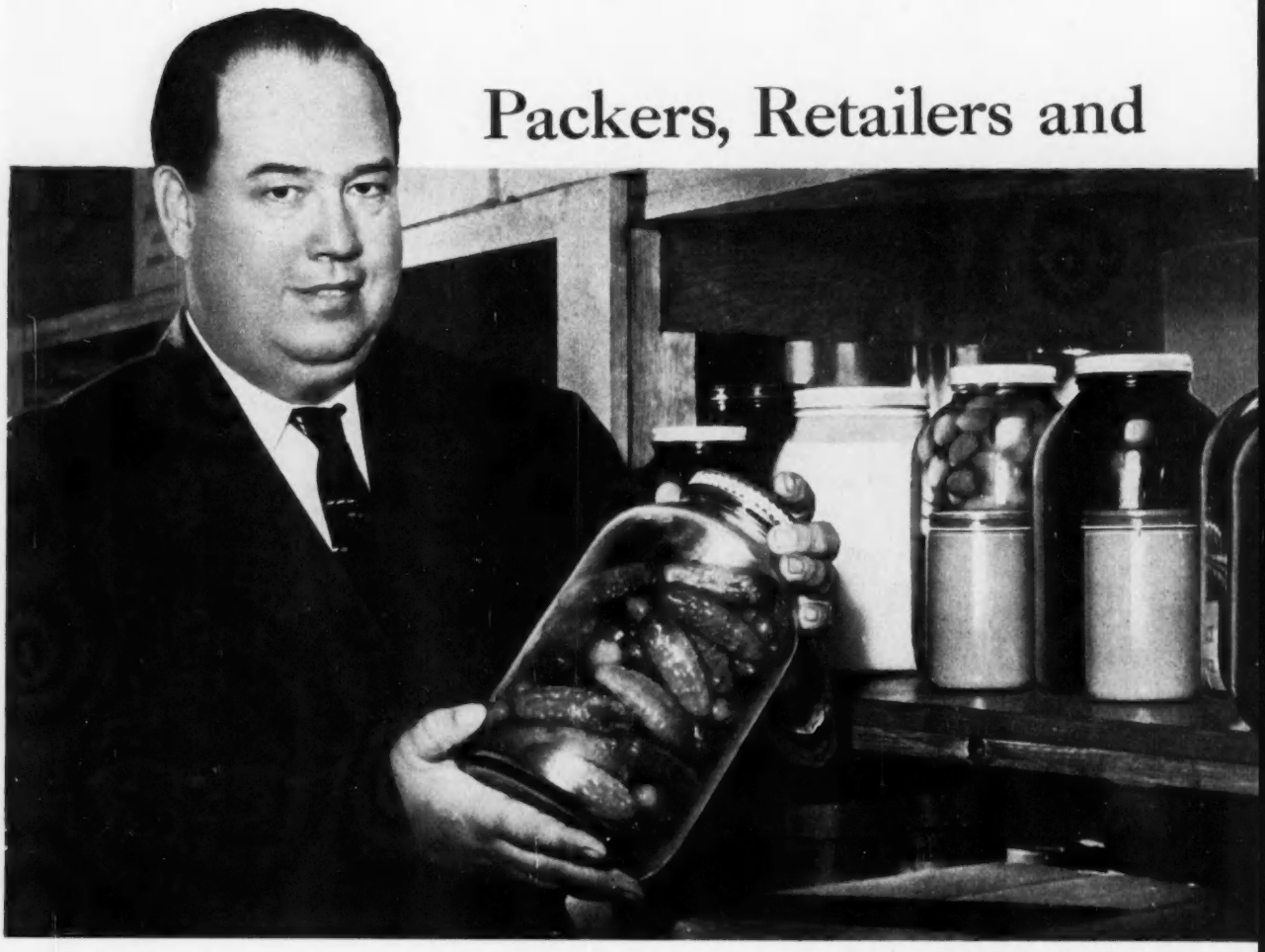
Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.

The Right Container

Versatility of facilities enables Owens-Illinois to supply containers to meet special needs: Duraglas containers for almost any item; Libbey Safedge packing tumblers or premiums; Kimble Ampuls and Vials; and a variety of Owens-Illinois plastic containers.

Packers, Retailers and



COMPLETE PACKAGING APPROACH

The Right Closure

Know-how as to the best available liner and closure—best for packing, displaying, or using a specific product—may well be one of the most important single points through which expert packaging counsel will reward you many times over.

Needed Fitments

With emphasis on the word "needed," Owens-Illinois specialists are keenly aware of sales benefits possible through use of plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.

Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

Consumers must all be considered

For example, Kenneth DeWees, Food Service Director of Spiegel, Inc., Chicago, is a consumer in the sense of being the user of large quantities of pickles in his cafeterias. His attitude is reflected in his statement—"I want my pickles in gallon glass jars." In addition to the absolute flavor protection and storage convenience provided by glass, Mr. DeWees especially likes the visible inventory they provide which enables him to see quickly how much is left and when to order more to avoid running out.

Many homemakers like the re-use feature of the refrigerator type jar. All of these containers are designed with the packer's requirements in mind.

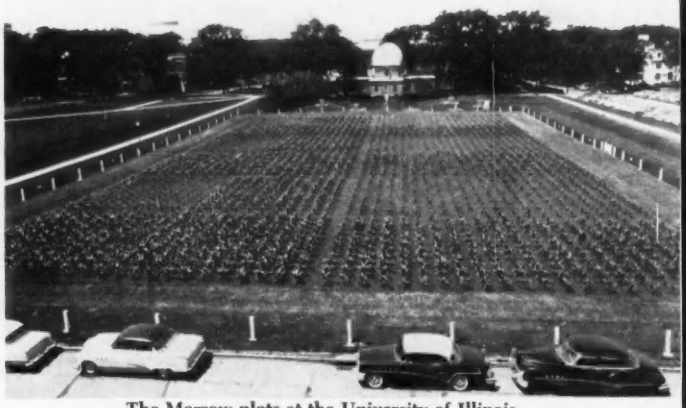
So for the glass jars and closures you need to meet your marketing situations look to Owens-Illinois for the most complete line. Our nearest office is at your service.

DURAGLAS CONTAINERS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

The Question . . .

How Much Nitrogen For Corn?



The Morrow plots at the University of Illinois.

By George D. Scarseth

American Farm Research Assoc.

The amount of nitrogen used for corn depends, to a great extent, on the viewpoint and know-how of management.

Management can be shortsighted and seek high production for a single crop. Emphasis would be placed on applying nitrogen when plants need it most. Nitrogen would be side-dressed one to four weeks after planting. On heavy soils a row starter of about 200 lb. of mixed fertilizer high in nitrogen like 6-24-12 or even an 8-32-0 would be used.

However, nitrogen used this way will take organic matter and minerals from the soil and will prove damaging to future crops. Experimental plots can show this effect. Most long-time fertilizer experiments have been deficient in nitrogen supplied from sources other than legumes and manures. Short-time field tests with synthetic nitrogen do not show what happens when nitrogen is added beyond the immediate crop needs.

The big news in corn experiments from the 1955 season came from the 80-year-old Morrow corn plots on the campus of the University of Illinois. University agronomists reported that in 1955 the continuous corn plot was divided. One area received a total of 200 lb. of nitrogen (as urea), 150 lb. phosphate and 200 lb. of potash per acre. The yield was 98 bu. per acre.

In another plot with a corn-oats-clover rotation where residues and manures had been returned every year, and lime and phosphates added, the yield was 100 bu. per acre.

Adequate fertilization on depleted soils brought immediate results.

Whatever effects adequate synthetic nitrogen might have over a period of years on soils with high carbon residues is still unknown.

Experiments at several experiment stations to meet this limitation have recently been started. However, there is a greater need for basic facts about nitrogen. More should be known about its behavior in the soil and its relationship to other soil and plant functions.

Many experiments fail to show any effects from nitrogen because of liminations of other factors. These factors can be bad management, too much root pruning, poor stands that let weeds take over, too much heat at silking and pollen-falling time, etc.

An experiment that fails to show the true value of nitrogen, because of other factors, can be misleading. This is particularly true if such data are used statistically as a basis for future recommendations.

Fundamentals Helpful

Nitrogen in the organic matter of crop residue may not be released in the soil to the plant roots immediately. Decomposition must reach a point where the carbon content is lowered to a level in balance with the nitrogen. The carbon content of the soil must be about 10 times greater than nitrogen.

Therefore, when straw, cornstalks, sawdust or grass sods in which the carbon-to-nitrogen ratio may be as high as 40 to 1 are turned in the soil, very little nitrogen will be available for plants immediately. The decomposition must progress to a 10 to 1 ratio. The excess carbon escapes as carbon dioxide from this action as does smoke from a fire.

If the nitrogen supply is low the decomposition process goes on with very little residual benefit to the soil. But if the nitrogen supply is good, the soil micro-organisms have a rich source of raw material to build into proteins of their own bodies. These bodies are the "meat" of the soil.

With a good supply of nitrogen they will multiply and build up a valuable storage of organic matter.

A 100 bu. corn crop will leave a residue in stover, roots and weeds of approximately 5,400 lb. of carbon and 114 lb. of nitrogen, or a carbon-to-nitrogen ratio of about 47 to 1. If no extra nitrogen is supplied only one-fourth of the carbon and organic matter will be used.

However, if 300 lb. of nitrogen were available to the micro-organisms, about one-half of the organic matter and carbon would, theoretically, be converted into the micro-organic residues. This is not practical, but does serve to illustrate principles involved.

These are two viewpoints. Shortsighted management would add just enough nitrogen to obtain the greatest crop stimulation. A longer range view would insist on additional nitrogen to feed the micro-organisms and utilize more of the crop residues. These are really two separate functions of nitrogen that are commonly overlooked.

Here, of course, it is assumed that the major and minor mineral elements are adequate and that a full heavy stand of about 16,000 to 20,000 stalks per acre is used.

In a continuous corn rotation on a grey, heavy, silty clay loam with a light subsoil, corn yields up to 1951 were about 25 bu. per acre. Now they are averaging 76 bu., by following improved practices. Yields in the past five years have run from 35 in a very dry year to 119.

The conclusion is that 150 lb. of nitrogen per acre annually balanced with adequate minerals is about the most practical and profitable rate. Of course, all the stover is left in the field. A minimum of one cultivation will leave considerable organic matter from the weeds.

HOLD IT!

PROTECT THE NATURAL RED COLOR OF

TOMATO PRODUCTS WITH CERELOSE®
BRAND DEXTROSE SUGAR

A big problem in canning is how to prevent chemical action from diminishing the striking, red color of tomatoes and tomato products and lessening their consumer appeal. Cerelose brand dextrose solves your problem . . . keeps your products "tomato-red" . . . protects your most potent selling point.

You'll find that color stays longer, looks more inviting when you use Cerelose in your catsup, chili sauce and other tomato products. Corn Products Refining Company also manufactures a wide range of excellent and economical corn syrups that point up the true spice flavors of catsups, sauces and pastes without over-sweetening.

Ask our technical staff about the many benefits of our syrups and dextrose sugar in canning. They'll be glad to call on you for a free consultation.

1906 • 50th ANNIVERSARY • 1956
CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.

Portable elevator is washed down as part of Gerber "clean as you can" operation

Most Important in Sanitation:

Effective Plant Cleanup

By Hal Delo

Gerber Products Co.

An effective program of plant cleanup is the most important single phase of a quality control sanitation program in a food processing plant. In the baby food industry and especially at Gerber's, where "babies are our business and only business," plant cleanup is considered one of the most important operations.

The chance of contamination by foreign material or micro-organisms is one of the more important hazards. The operation of an effective cleaning program is tantamount to its elimination.

Any plant cleanup program must consider three basic problems:

1. *Physical contamination.* This is usually a visible contamination and is the most easily detected.
2. *Bacteriological contamination.* This is an invisible contamination which must be very carefully watched through many different types of inspection.
3. *Chemical contamination.* This may be either visible or invisible and can be very dangerous as a toxicity problem. Any chemical factors affecting quality must be eliminated.

In order to handle adequately all of these factors Gerbers uses a two-phase cleanup program.

Two-phase Program

The first phase of this plan is the continuous "clean as you can" program, done by production workers during actual running time.

The second phase is the specific cleanup operation carried on each night by a trained cleanup crew under the supervision of a competent foreman.

At the Fremont, Mich., plant we have an experienced crew. Many of the members have long-established seniority. Job ratings for cleanup men correspond to regular production job ratings, giving the workers the essential benefits of the rating program.

We have over the years developed a cleanup manual which outlines how to clean each individual piece of equipment in the plant. This procedure gives instructions for cleanup at each down period as well as daily and weekly procedures.

The manual outlines the method of cleaning, the type and amount of cleaner to be used.

Requisition System

When each cleanup operator starts his nightly chore, the correct amount of cleaning material is ready for him in his department.

We use a requisition system for cleaners. We find when the cleaning material is weighed out, the equipment is cleaned in an effective manner. This system also eliminates the problem of excess cleaner left in the area of use and the possible chance of contamination of the product.

In-place Cleaning

Over the past few years, partly from necessity and also from a practical viewpoint, we have been faced more and more with a problem of developing an in-place cleaning system for pipe lines.

The use of more and longer lines presented a cost problem which made the brush-and-elbow method of pipe cleanup impractical.

We have now gone almost exclusively to a circulation cleaning system with the permanent installation of welded pipe lines. Not only have we been able to improve the quality of our cleaning operation but we have materially reduced the labor cost.

Formerly each line was completely dismantled and cleaned by a power brush. We now clean the entire line by circulating a solution from the tanks through the lines and back to the tanks. We find that by doing this we get a better job in a shorter time.

These factors must be considered in running a circulating system:

1. Connection of the lines.
2. Pump utilization.
3. Time and temperature used.
4. Water problems.
5. Rinsing methods.
6. Inspection.
7. Flexibility of pipe arrangements.
8. Correlation to bacteriological controls.

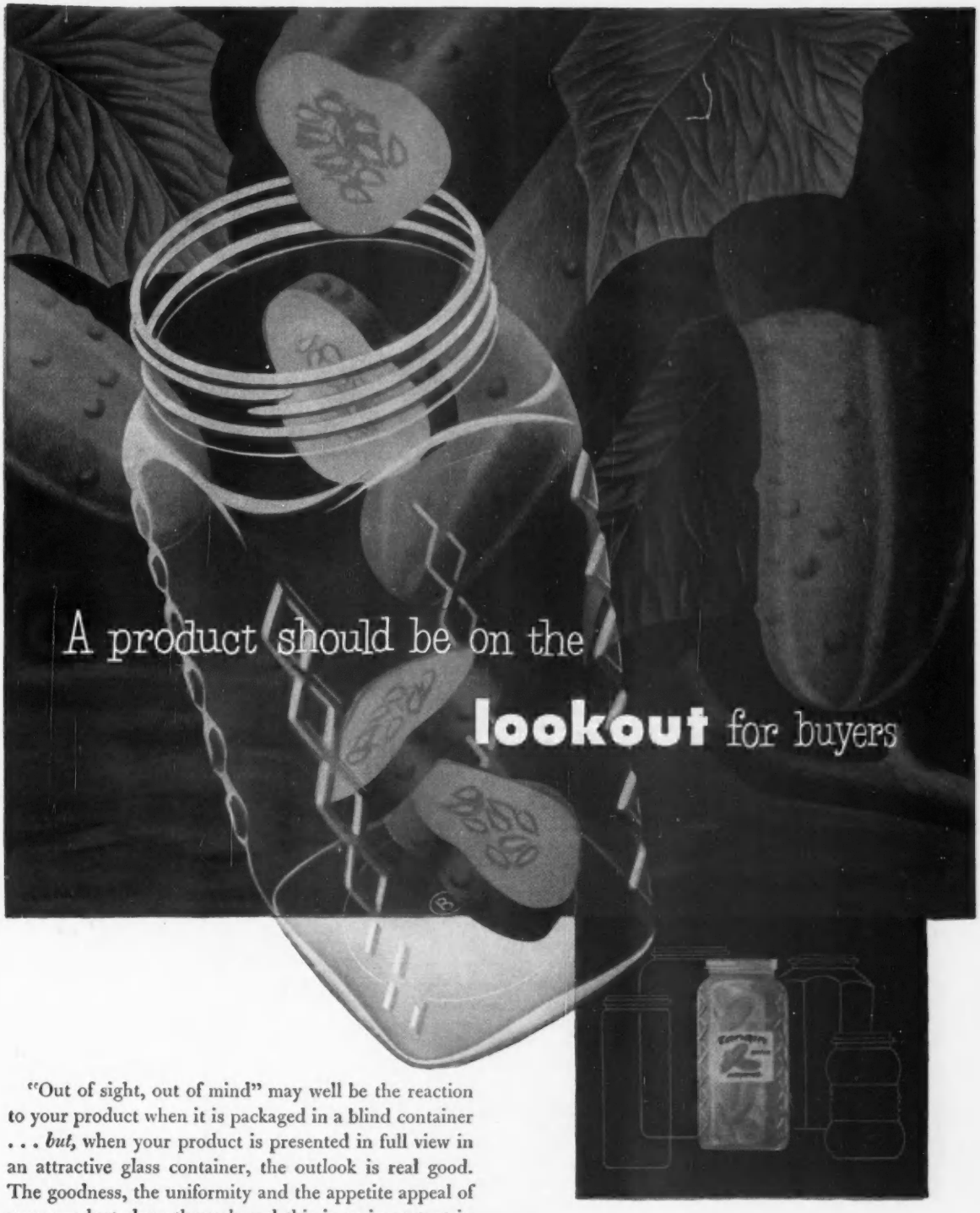
The types of cleaners, the cleaning time, and the temperature of cleaning solutions will vary with the product residue being cleaned. The time normally required for circulation cleaning is about half of that used in the other method. Actually there is an even greater saving of labor because during circulation the cleanup man is free to do other things.

Cleanup jobs on belts, reels, etc., are done with mechanical equipment whenever possible. Return circulation systems on reels, etc., have proven very good both from the material cost and labor viewpoints.

At present we are attempting to evolve a work standards program to reduce further our cost of cleanup.

We utilize the technical service programs of our suppliers and have found these services essential to an effective program.

One man who services both the midwest and eastern divisions of Gerber's is an expert in detergent chemistry. He has had a wealth of diversified experience. With his help we have been able to utilize more effectively the materials we buy. The result has been a substantial saving of cleaning materials.



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Effects of Salt-Acid Ratio on:

Sauerkraut Quality

By Carl S. Pederson
Margaret N. Albury
Willard B. Robinson

Cornell University

Salting of sauerkraut has been a subject for considerable study over a period of years. The Dutch method of preparing sauerkraut described in the book by Lind in the 18th century could well apply today. The amount of salt to be used however was not specified.

The definition of sauerkraut in the old regulations under the Federal Food and Drug Act specified that cabbage be fermented in the presence of not less than 2%, nor more than 3% of salt. This regulation was adhered to for a number of years and interpreted at times to mean that the canned kraut should also contain at least 2% of salt.

There was a tendency among packers to start early fall packing with 2% or more salt and to increase this amount gradually during the season until about 3% was reached. In canning, salt brine was used to insure sufficient salt. A few packers felt that additional salt would improve the flavor of low acid kraut.

Little control of salt content beyond the use of the "salometer" was exercised. Its unsuitability for the purpose of salt determinations is now well known. Soft kraut and pink kraut were common. Soft kraut is now to occur in areas of insufficient salt while pink kraut is often present when there is an excess of salt (Pederson 1938). When salt was unevenly distributed in packing, soft and pink kraut often occurred in adjacent areas (Pederson 1946). Salt is now known to affect the sequence of bacterial species responsible for fermentation (Pederson and Albury 1954).

In some of the early studies, it was frequently observed that high salt krauts were poor in quality, but there were always a few that were good in spite of the high salt content. (Pederson and Kelly, 1932, Pederson, 1940).

The National Kraut Packers Association made available to us over two hundred cans of kraut, duplicates of which had been graded by members of the association and representatives of the USDA Processed Products' Standardization Board of the Fruit and Vegetable Division. In addition, the grade-scores of these samples were made available.

These krauts have been analyzed for acid, salt, ascorbic acid, and reflected color (using the Hunter Color Difference Meter). Other possible pertinent data such as flavor, can vacuum, corrosion, slack fills, etc. were recorded. The samples graded consisted primarily of canned krauts sent in by various members of the association but also contained numerous experimental samples selected in a study of temperature and time effects upon quality of kraut.

As a result of this study three relationships have been noted as follows: (1) kraut with high or low amounts of salt in relation to acidity were generally of poor quality, (2) the ascorbic acid content of kraut is related to age and to the temperatures of fermentation, processing and storage; and (3) measurable color is an indication of quality. The effect of salt-acid relationships will be discussed here.

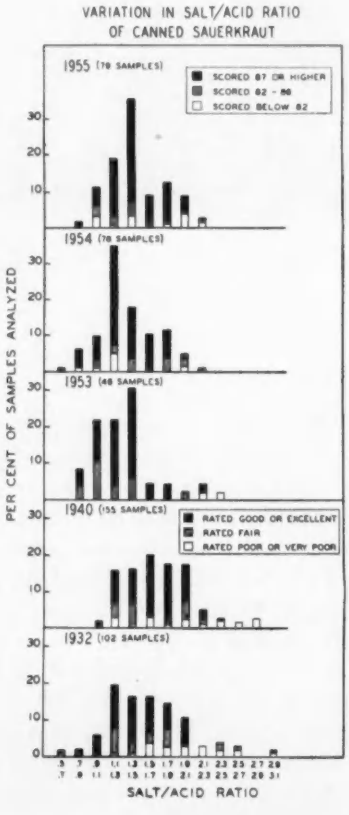
In studying the 1953 results of grading in comparison with chemical analysis, it was observed that the best samples were scored uniformly high by the graders and that those samples almost without exception showed a ratio of salt to acid of between 1.10 and 1.46. Of the 18 intermediate quality samples that yielded average scores between 85 and 89, 12 had salt-acid ratios of above 1.50 and below 1.10. The intermediate samples showed a wide range in scoring by individual graders.

Obviously some graders noted faults that others missed entirely. The five krauts given the lowest average scores also showed considerable variation in individual scoring but were scored low by all graders. The two poorest had salt-acid balances of 2.11 and 2.37. These results led to a reevaluation of the data obtained in 1932 and 1940 and a further analysis of the series of samples graded in 1953, 1954, and 1955 in an attempt to further define the factors necessary to produce high quality sauerkraut.

After calculation, the salt-acid ratio for each sample was compared with the average score given. The 1953, 1954 and 1955 ratings are average scores given by members of the Kraut Packers Association and the USDA Processed Products Branch of the Fruit and Vegetable Division. Ratings are divided for graphing, Fig. 1, into three groups, those scoring 87 or above, those scoring 82 to 86 and those scoring 81 or below. The 1932 and 1940 samples were graded in our laboratories and classed as good and excellent, fair and poor.

The results, Fig. 1, show greater uniformity in salting during the past three years than in 1932 and 1940. They further show that the quality of those krauts in the intermediate range of salt-acid ratios were superior to those that yielded high or low ratios. Even when krauts with high or low salt-acid ratios were classed as good, the total scores given are low for this classification. The more narrow range of salt-acid ratios for 1955, as compared to those of 1932, reflect the improved uniformity in salting. Examination of Fig. 1 reveals that

(*Continued on Page* 39)



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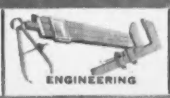

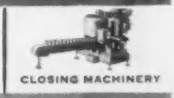

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...PLANTS FROM COAST TO COAST

WILBUR A. GOULD, PH.D.

Ohio State University

Quality Control Editor

Quality Control Clinic

Evaluating Tomato Grades With Color Instruments

In grading tomatoes for processing there are difficulties in determining the exact color line from day to day or season to season. There are differences in varieties of tomatoes and in the types of illumination; daylight changes from hour to hour, and the eyes of inspectors get tired.

Some of these difficulties could be eliminated if an accurate, objective instrument or instruments were available to serve as a bench mark.

In 1953 and 1954 raw tomatoes were graded for color by an official inspector of the Federal-State Fruit and Vegetable Inspection Service in accordance with the U. S. Standards for Manufacture of Strained Tomato Products (1).

All grading for color was done in the grading room of Ohio State University, Department of Horticulture, which had standardized lighting provided by special daylight type lamps.

The inspector selected 10 tomatoes from each variety, at each harvest, for each of the four color classifications:

1. U. S. High No. 1's
2. U. S. Low No. 1's
3. U. S. High No. 2's
4. U. S. Low No. 2's

These tomatoes were then evaluated for color by using the Hunter Color and Color Difference Meter and the Agtron Models E and F.

1. The Model E was used to evaluate the cut surface color of each raw tomato selected by the official inspector. The readings for the 10 tomatoes per lot were averaged.

The standardization was carried out in accordance with the procedure recommended by the manufacturer as follows:

a. Adjust the meter to zero with both the red and the black knob using the black standard provided with the instrument.

b. Replace the black disc with the red disc and set the green reading to 50 using standardizing knob. Then set the instrument to red and adjust the meter to 100 using the ratio knob.

c. Replace the red disc with the two halves of the cut tomato sample. Set the instrument on red and adjust the meter to 100 with standardizing knob. Then set the instrument on green and read the meter which is the model E reading.

2. The Model F was used to evaluate the color of the juice or pulp extracted from each lot of 10 tomatoes, again following the manufacturer's instructions.

The Model F is first standardized on zero by using a black plastic disc, then standardized at 70 using a red plastic disc. This disc approximates "tomato red" color. The sample is then placed in position and the reading taken.

3. The Hunter meter was also used to evaluate the color of the tomato juice extracted from each lot of 10 tomatoes.

It was standardized by using a tomato red porcelain tile furnished by Dr. S. G. Younkin, Campbell Soup Co., with a setting as follows: L, 25.59; aL, 27.40; bL, 12.54. A National Bureau of Standards red kitchen and bathroom tile was used to check the preliminary standardization. The meter evaluations were made using the small area illumination with the small aperture (1-1/16 in. in diameter). All readings were taken using the L, aL, and bL scale. The

Table 1. — Correlations coefficient between Hunter Color and Color Difference Meter readings and Model E, and Model F readings for 1953 and 1954 seasons combined.

r	Agtron E	Agtron F
Hunter L	.847**	.970**
Hunter a	—.874**	—.713**
Hunter b	.477**	.740**
R L, a, b,	.954**	.980**

** Significant at .01 level.

Table 2. — Summary of statistical analyses of Model E readings for raw tomato juice extracted from tomatoes classified by an official Federal-State inspector into High U.S. No. 1's, U.S. Low No. 1's, U.S. High No. 2's and U.S. Low No. 2's for color, 1953-1954 seasons combined.

	High U.S. No. 1's	Low U.S. No. 1's	High U.S. No. 2's	Low U.S. No. 2's
No. of observations = (N)	397	442	452	357
Average = (X)	36.4	46.1	50.8	71.7
Standard deviation = (SX)	5.79	8.07	9.18	12.3
Standard Error of Mean = (sx)	0.29	0.38	0.43	0.65
Coefficient of Variability = (V)	15.9	17.5	18.0	17.1

Table 3 — Summary of staistical analysis of Model F readings for raw tomato juice extracted from tomatoes classified by an official Federal-State inspector into U.S. High No. 1's, U.S. Low No. 1's, U.S. High No. 2's and U.S. Low No. 2's for color, 1953-1954 seasons combined.

	U.S. High No. 1's	U.S. Low No. 1's	U.S. High No. 2's	U.S. Low No. 2's
Number = (N)	47	47	47	47
Mean = (X)	30.49	39.85	44.45	66.22
Standard Deviation = (SX)	3.95	5.43	5.44	11.49
Standard Error of Mean = (sx)	0.58	0.79	0.79	1.79
Coefficient of Variability = (V)	12.96%	13.61%	12.24%	17.35%

viewing cell used to hold the sample was 10.5 cms. high and 6 cms. in diameter. The bottom of the cell was of optical glass. Preparation of samples for the Model F and the Hunter units follows:

In lots of 10, the whole tomatoes were quartered into a deep tray. The quartered tomatoes and juice were extracted in a pulper and then deaerated. Deaeration was accomplished in approximately 10 to 15 minutes by pouring the pureed sample slowly into a 5-liter flask under a vacuum of 25 to 30 inches of mercury. By alternately pulling and breaking the vacuum the air was removed.

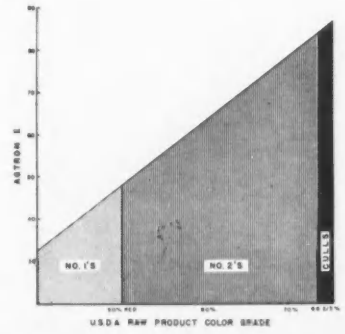

Chart 1. Relationship between Model E readings of raw tomatoes and USDA raw product color grades.

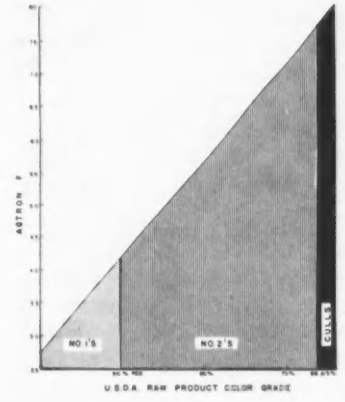

Chart 2. Relationship between Model F readings of raw tomato juice and USDA raw product color grades.

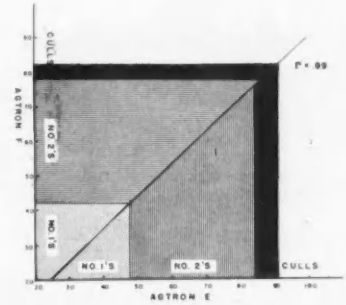

Chart 3. Relationship between Model E and F readings.

Results and Discussion

Data presented in Table 1 show that when correlating the average Model E readings with Hunter readings for juice extracted from these same tomatoes a highly significant multiple correlation coefficient (.954) is obtained. There was also found to be a highly significant multiple correlation (.980) between the Model F and Hunter readings.

Thus, since the data indicate that both the Model E and Model F can be used to obtain an objective color index of raw tomatoes, it is believed these instruments can also be used to establish the dividing lines for different color grades of raw tomatoes.

There could be a question as to the inspector's ability to determine the grade in U. S. No. 2 range. However, in studying the statistical variation of his selections it is observed in Table 2 that there is little difference in the coefficients of variability for the different color classifications. This indicates that the inspector's ability was about the same for any given color grade. It must be emphasized that in these studies the grading was carried out under ideal standardized illuminating conditions.

Using the data presented in Table 2, the dividing lines for color grades

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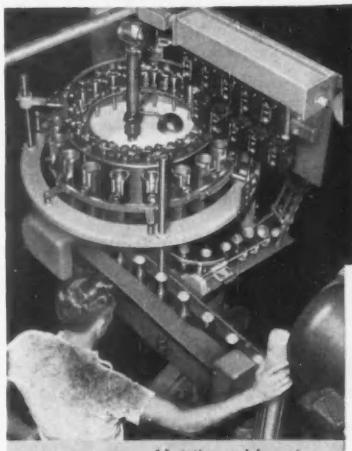

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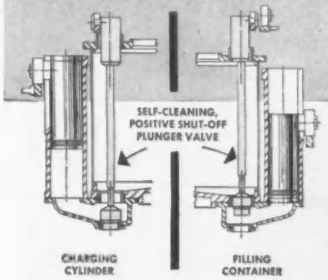

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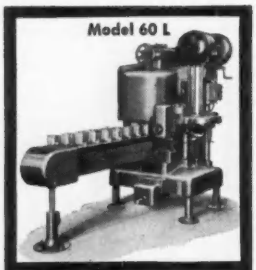
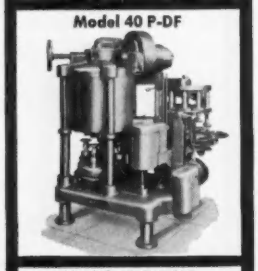
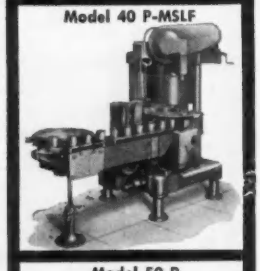
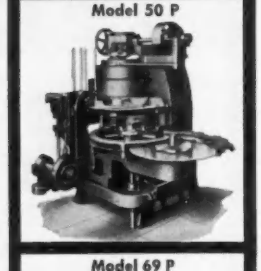

Model 60 L


Model 40 P-DF


Model 40 P-MSLF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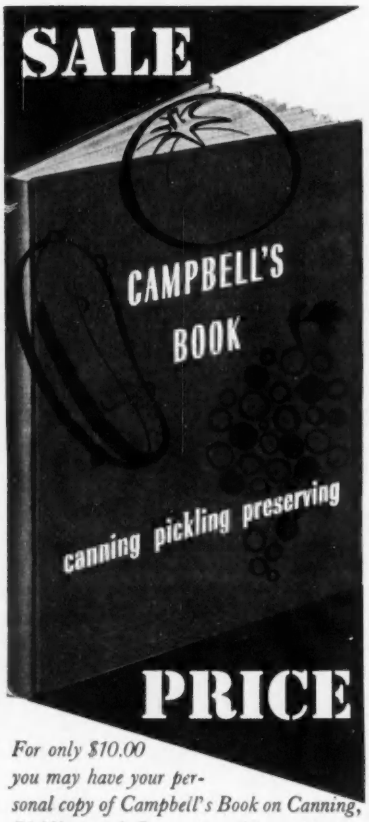

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Quality Control

(*Continued from Page 31*)

Dr. James O. Mavis inserts a cut tomato into the Model E for color reading.

were determined for Model E readings.

They were found to be a reading of 47.89 or 48.0 between U. S. No. 1's and U. S. No. 2's and a reading of 84.0 between U. S. No. 2 and U. S. Culls for color.

Using these calculated values Chart 1 was constructed which shows the relationship between Model E readings and the USDA raw products grade. A Model E reading of 48, which is the line between U. S. No. 1's and U. S. No. 2's, was used as the 90% minimum tomato red for U.S. No. 1's. A reading of 84 was used as 66⅔% tomato red minimum for U. S. No. 2's, and a straight line was then drawn through the two points.

Thus, from a chart such as this a processor could tell whether the tomatoes were low U. S. No. 2's or high U. S. No. 2's which could mean a great deal of difference in quality of juice being processed.

The Model F was employed to evaluate the color of raw tomato juice extracted from different color grade classifications.

Data in Table 3 were used to determine the dividing lines between color grades.

The dividing line between U. S. No. 1's and U. S. No. 2's was found to be 42.1, and between U. S. No. 2's and U. S. Culls it was found to be 77.5.

These two lines were used to construct Chart 2 which shows the relationship between Model F readings and USDA raw product grades. This chart was constructed similarly by using the calculated Model F readings 42.0 and 77.5 as the dividing line between the grades.

A straight line drawn through the two points shows the relationship between USDA color grades and Model F readings.

Here again, by using such a chart the processor could determine not only if the tomatoes were U. S. No. 1's or U. S. No. 2's but also the range within either grade of No. 1 or No. 2.

In the final phase of these studies the average Model E readings were correlated with the Model F readings for all the lots graded by the State-Federal inspector. A highly significant correlation coefficient of .89 was obtained. Using these same data, the regression line was calculated and plotted as shown in Chart 3. A chart such as this enables a processor to relate color grading of the cut surface of a raw tomato to the juice color extracted from the tomato.

One of the most significant points shown in Chart 3 is the fact that when the dividing line between U. S. No. 1's and U. S. No. 2's for the Model E is drawn perpendicular to the dividing line between U. S. No. 1 and U. S. No. 2 for the Model F they, intersect at the regression line.

Conclusion

From these studies it is concluded:

1. The Model E instrument can

(*Continued on Page 38*)

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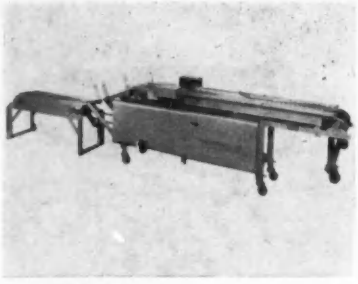


Case Packer

A new case packer for packing No. 10 cans in "open-end" cartons is announced by Manitowoc Engineering Corporation, Manitowoc, Wis.

Advantages claimed for the unit include savings in carton costs; no tearing or distortion of labels; no rolling or bumping to damage product or container; greater packing efficiency; and compact design.

Cans travel in an upright position past a divider mechanism, separating them into two equal lanes. Special "star wheel" timing pawls pass three No. 10 cans through each lane, then lock into position to keep following cans in place on the conveyor. The six cans allowed to pass through gently slide down an incline into the open end of the carton. At this point, the operator tilts the carton to an upright position on the take-away conveyor and he operation is completed.

Soluble Turmeric

Concentrated water soluble turmeric has been developed in the laboratories of Magnus, Mabee & Reynard, Incorporated, 16 Desbrosses St., New York 13.

According to the company, Oleoresin Turmeric No. 800 MM&R is stronger in color value and more completely soluble than other oleoresins. Ideal for seasoning and as a yellow vegetable color, has been thoroughly tested in the food industry and pronounced superior on all counts, the manufacturer further states.

Thiram

E. I. du Pont de Nemours & Company, Wilmington, Del., has developed a thiram product for dry (dust) treatment of seed. It is "Arasan" 75 thiram seed disinfectant and protectant, containing 75 per cent thiram, in comparison to 50 per cent thiram in "Arasan," which it replaces.

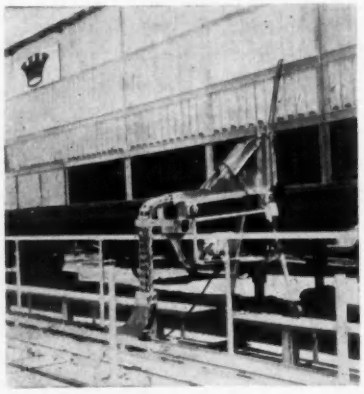
According to the company, the increased thiram content makes it possible to provide greater protection for certain seeds with less total dust applied. In addition to the increased concentration, the new product is a wettable powder which is said to facilitate its use in slurry or sprays for certain specialized applications.

Can Handling

Two pieces of can handling equipment have been announced by the Shuttleworth Machinery Corporation, Warren, Ind.

The first is an unscrambler that is set immediately ahead of the labeler. A portable machine equipped with adjustable casters, it is moved easily from one labeling machine to another. Casters recede at the flick of a lever when the machine is in place.

The second piece – a crate unloader – receives a retort crate containing either hot or cold, wet or dry cans from dollies, monorail or roller conveyors. It requires no latching or fastening. The crate is set on a platform, a cover drops over it, and the entire section – platform, crate and cover – is elevated to a vertical position from which cans are allowed to roll gently into a hopper.



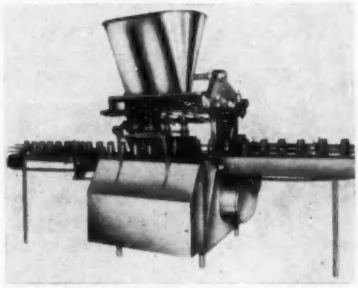
Can Delivery

A new can delivery system whereby one man on the loading platform was able to put an average of 1,200 ready-to-fill 6 oz. cans per minute directly into a cannery filling-line was demonstrated recently by Crown Cork & Seal Company, Inc., Baltimore, Md. Scene of the demonstration was the Minute Maid Corporation's citrus concentrate plant in Leesburg, Fla.

The Crown system shown here utilizes a conventional flat bed highway trailer which transported eight specially built can containers discharging by gravity and a wheeled boot device mounted on a track set in a raised concrete platform. The boot enables the load of cans to be transferred in orderly ready-to-fill fashion from container to cannery filling-line via a cableway extension.

The Crown container is fitted out with 11 vertical cells and is made with a pitched-bottom so that the load will be self-discharging when the cell-gate locking pin is removed. The cans are fed automatically by gravity flow into the cells at the Crown plant.

Company engineers maintain that the Crown system's delivery speed is limited virtually only by the speed limitations imposed by a cannery's filling-line.



Filling Machine

A piston filling machine that handles from 2 oz. to quart and 2 lb. containers and fills semi-liquids and semi-solids including food, dairy, paint and chemical products is being offered by the Filler Machine Company, Inc., 10 Penn Ave., Rockledge, Philadelphia 11.

The valve mechanism on the machine is made so that it can be dismantled, cleaned and reassembled quickly, practically eliminating downtime for cleaning and changeover to different products.

The unit, called the Model SL55, is a straight line filler and will not fill unless containers are under the filling nozzle. This "no container, no fill" feature keeps the product from being wasted and keeps the filling machine clean. The type of fill is by the bottom up method to eliminate air pockets and insure a completely solid pack. On semi-liquids, such as jellies, this method of filling eliminates foam. Speed of fill is from 60 to 88 containers per minute with higher speeds available.

The manufacturer advises that all parts are slow moving to reduce costs for wear and maintenance.

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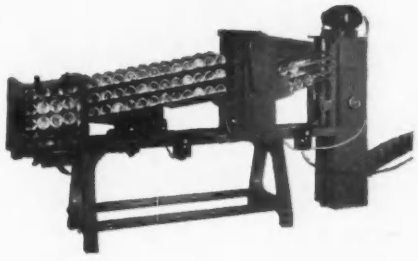
. . . for MINIMUM IMPACT and MAXIMUM SPEED



- ★ A two-layer case is filled with each stroke.
- ★ Cans are lifted, then GENTLY pushed into proper tracks.
- ★ Operator simply places empty case . . . machine automatically fills and discharges it.
- ★ Funnel is cleared with every plunger stroke, minimizing impact.
- ★ Exclusive variable speed arranger assures uniform supply. Automatic safety and clearing devices included.

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STOP PRODUCTION HEADACHES

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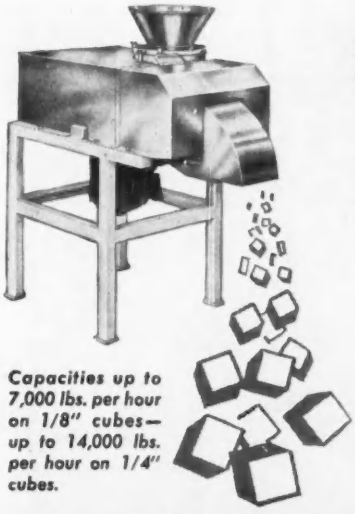

Capacities up to 7,000 lbs. per hour on 1/8" cubes—up to 14,000 lbs. per hour on 1/4" cubes.

Here's why:

- ■ *It produces crisp, uniform pieces that are* ***more appetizing!***
- ■ *It eliminates loss of pickle liquid due to product crushing—****all the juice is locked in!***
- ■ *Dices relish sizes from 1/16" x 1/8" x 1/8" to 1/8" x 1/4" x 1/4". Also other sizes up to 1/4" x 1/2" x 1/2" for special products.*
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Freezing News

Promotion • Selling • Research

Research: Warming Up

Research on nutrition brought a red-hot item for promotion in the frozen food industry.

The research work published recently by Drs. Marie Burger, L. W. Hein, L. J. Teply, P. H. Derse and C. H. Krieger of the Wisconsin Alumni Research Foundation in Madison, Wis., presented nutritional values for 51 frozen foods.

Industry leaders welcomed the research work. F. Gilbert Lamb, of Lamb-Weston, Inc., in Weston, Ore., president of the National Association of Frozen Food Packers, said that the nutrition facts were the strongest sales tool yet available to frozen food packers, distributors, brokers and retailers.

Copies of the report are available from the association offices, Washington, D. C.

Comparisons?

A still warmer item came with preliminary attempts to compare frozen foods with foods that are fresh or preserved by other methods. Food technologists interviewed by *Food Packer* summarized the problems:

1. Comparisons are valuable when they relate to changes caused by processing.

2. Not so valuable when they are used as a measure of what the customer actually eats.

They point out that fresh foods are still a kitchen's distance away from the palate. Some frozen foods and canned foods are much closer. Still lots of nutrients go down the kitchen sink, and these are hard to measure.

Aluminum foil pans can be produced on the production line of a frozen food processor, with a new press made by the Basca Manufacturing Co., of Indianapolis, Ind.

Other Research

The American Meat Institute Foundation with a research contract with the Quartermaster Food and Container Institute for the Armed Forces has a project. The objective is to determine whether frozen-dried beef steaks can be brought to a high tenderness rating through application of an appropriate combination of proteolytic enzymes.

From the annual meeting of the Institute of Food Technologists held in St. Louis in June came reports of several projects.

• From R. J. McColloch and associates of the USDA Fruit and Vegetable Chemistry Laboratory at Pasadena, Calif., came a study of frozen superconcentrated citrus juices. They found that cloud stability, a desirable attribute, is a function of the concentration of sugar and concentrate at each fold. They worked with 5-, 6-, and 7-fold concentrations.

• Off flavors were studied by J. S. Blair and colleagues at the Research and Development Center of the American Can Company, Barrington, Ill., and by Olsen, Moore, Wenzel and Huggart of the Florida Citrus Experiment Station, Lake Alfred, Fla. The cause of undesirable flavors, termed "castor oil," "tallowy," and "cardboard," is elusive.

Blair and co-workers suspect that the fruit is interrupted during the natural process of producing fats from sugars. The harvested fruit is at the stage where the fats have become free fatty acids.

Olsen and his associates are inclined to see a similarity between off flavors in fruits and the occurrence of oxidized flavors in dairy products.

• A packaging technique utilizing dry ice, a four-unit transporter case and improved insulation, is intended to extend the life of pre-cooked frozen meals. M. M. Raymand and co-workers at the Quartermaster laboratory in Chicago worked out the technique.

New Products

New frozen food products in bright new packages made their appearance on grocery shelves last month. The recent additions of both pre-cooked and ready-to-cook seemed to be dominated by meats, as reports reached *Food Packer*.

• In Texas, Bill Williams added ready-to-cook chicken livers and gizzards to his "Savage Style" frozen poultry products line.

• Twelve frozen meat courses became available in Oklahoma from the new line of the Oklahoma Packing Company. The ready-to-cook packages include ten ham sticks, ten beef sticks, four boneless beef steaks, four boneless pork cutlets, four breaded pork cutlets, four boneless ham steaks, breaded veal cutlets, six sausage patties, sweetbreads, calf liver, precleaned beef brains and pre-cleaned pork brains.

• The Atlantic Trading Corporation, importer of Conga Brand Fresh Frozen Frog Legs from Cuba, announced that this product is taking its place in frozen food cabinets all over the country.

• The Marhoefer Packing Company of Muncie, Ind., expected to start distribution of its frozen pork cuts this month. They include loin and rib roasts, pork chops, fresh ham roasts and fresh shoulders, bone in and boneless loins, tenderloins and pork patties.

• Two complete Chinese dinners were added to the line of the Kubla Khan Food Company, Portland, Ore. The Combination Dinner includes fried shrimp, chicken chow mein and chicken fried rice. The Spareribb Combination features barbecued spareribs, pork chow mein and pork fried rice.

• Frozen mixed fruits, prepared from rehydrated prunes, apricots and peaches, are now being marketed in a 1 lb. "Hydro-Pac" can by Mariani Frozen Foods, Santa Clara, Calif.

Continental Can Company announced a family of frozen juice cans. Left to right are 32 oz., 12 oz., and 6 oz. cans. Wrap-around body lithography is shown in mirror image.

The Market Place

News of Promotion & Selling

Citrus Promotion

To get this summer's citrus season off to a good start the National Citrus Merchandising Committee has scheduled a "Citrus Coolers for Summer Health" promotion for June 21-30, featuring oranges, lemons and grapefruit in both fresh and processed forms.

The NCMC is composed of representatives of all citrus-producing areas, the National Association of Food Chains, NARGUS and the United Fresh Fruit and Vegetable Association. The American Farm Bureau Federation also takes an active part in the committee programs.

Courtesy Owens-Illinois Glass Co.

Mayonnaise Week

Identical twins, Sally and May Jones, 3½ years old, of Van Nuys, Calif., help kick off National Mayonnaise and Salad Dressing Week, June 21-30, with this giant-size salad.

Courtesy Armstrong Cork Co.

'Stokely Square'

The new "Stokely Square" pickle jar is designed for maximum appeal at the point of purchase. At the same time it offers advantages to store operators because it is easy to handle. Flat sides make the label easy to read and provide more space for label selling.

Incorporated is a stacker feature which reportedly permits shelves to be stocked in half the usual time as the bottom of the top jar locks with the cap of the lower jar. This locking feature eliminates the need for dividers in the shelf stock and reduces breakage.

Wide mouth and new metal "twist off" lug cap permits easy removal of contents and adds to reuse value.

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Jellies and Confections
Because...

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FOR SALE: Niagara #510-28 type 316 Stainless Steel Filter, 510 sq. ft.; Fitzpatrick Comminuting Machines, Models D, F & K; (1) Hope type 18 semi-automatic stainless steel single piston filler; (5) Stainless Steel Tanks from 30 gal. to 10,500 gal. cap. (Some with mixers). (25) Aluminum Storage Tanks up to 3200 gal. cap. (30) Stainless Steel and Stainless Clad Steam Jacketed Kettles from 40 gal. to 500 gal. (Some with agitators). Lot of Welded Steel Tanks with Lastiglas and mammut lining (from closed breweries)—4300 gal. to 23,000 gal. sizes. 30 Wood Tanks—4500 gal. to 14,000 gal. sizes.
PERRY EQUIPMENT CORP., 1405 N. 6th Street, Philadelphia 22, Pa.

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FOR SALE: 3 Model F CRCO Stringbean Snippers; 3 Model #5 CRCO Stringbean Graders; 3 Urschel Model 30 Stringbean Cutters; 1 Nubben Grader; 1 Sprague-Sells Figure 460 Hand Pack Filler.
All of above equipment in very good condition and ready to go to work. Will sell all above items as one unit $10,000 FOB Plant.
NORTHWESTERN CANNING & PACKING CO., Seffner, Fla.

FOR SALE: 2 Karl Kiefer Rotary Air Cleaners, Model #1—12 stem for 8 oz. bottles and 3¼ in. jars. Little used.
1 Vulcan #5000 single deck gas fired oven with safety pilot, 58000 B.T.U. Natural gas. Excellent condition.
1 #1218 Eclipse 18" atmospheric wheel gas burner, capacity 210 c.f.h., natural gas with safety pilot. Excellent condition.
1 #40 1" KV. Partlow temperature controller, range 100-650° F. Excellent condition.
Write Box #99, Food Packer.

STAINLESS TANK. 1 600-gal. stainless steel tank with cover, stands, stainless sanitary valve; immediate delivery, like new, bargain price. Write Box #101, Food Packer.

Offer subject to prior sale, for immediate removal, approximately 20,000 cases 15½ oz. 63-400 C. T. Flint Economy jars packed in 1 doz. C-style cases, printed on two sides, two ends and top flaps. These jars on fresh factory stock. A reasonable offer will be accepted. Write Box #102, Food Packer.

Machinery Wanted

CASE PACKER—COMPRESSION UNIT. Interested in immediate delivery of Standard-Knapp or equivalent, automatic case packer, sealer and compression unit; prefer first-class, modern equipment, price secondary, but must have complete details, including manufacturer's name, model, age, serial number, motor specifications and description of what the equipment will do in first letter. Our representative will then inspect. Write Box #100, Food Packer.

Choice Business Opportunities

FOR SALE: Modern Tomato Canning Factory and Modern Whole Grain Corn Canning Factory. Tomato Cannery complete with Cooker and Cooler 200 c.p.m. Corn Cannery complete with Continuous Pressure Cooker and Cooler 200 c.p.m. Tomato Cannery located in separate building and can be bought separately. CHESTER PACKING CO., Chestertown, Md. Phone Chestertown 652.

CHR. HEURICH BREWERY CLOSES DOORS. The only brewery in our nation's Capital has closed its doors, and offers for sale some excellent modern equipment, including 1948 Model Hartford-Empire unscrambling table, Hartford-Empire rinser, Standard-Knapp Model 830, 6-land automatic case packer, Standard-Knapp Model 429 gluer and compression unit, Barry-Wehmiller Model 1104 Vortex pasteurizer or heat exchanger, American Can closing machine, Serial #55028; 2 Ermold 8-wide automatic labelers, approx. 400 ft. of belt conveyor, 330' of live roller conveyor, 21 AC motor drives, 100' gravity conveyor, and 270' of Alvey Figure 400 carousel conveyor, all installed new 1948; plus hundreds of feet of miscellaneous other motor driven belt conveyors, gravity conveyor, etc., all erected as last used until the brewery closed early this year; can be purchased individually or entire lot at mere fraction of replacement value; dealers invited, inspection invited, subject prior sale. CHR. HEURICH BREWERY, 26th and D Sts., Washington, D. C. Phone REPUBLIC 7-1600.

FOR SALE: Cannery located centrally in one of best farming areas in the east, in close proximity to large markets and with excellent labor pool. As equipped has capacity of fully 300,000 cases of four of principal vegetables in sizes from #303 to #10. ALLIED INDUSTRY OWNER will sell at favorable price and terms, with possession immediate or prior to 1957 season. Write Box #98, Food Packer.

Help Wanted

WANTED: College graduate major in chemistry or food technology for work in Midwest pickle plant quality control and research department. Replies will be held in strict confidence and should include education, age, experience, and present salary. Write Box #103, Food Packer.

FOOD PACKER TELLS YOU HOW . . . 8½ x 11 soft cover volume containing the best articles from recent issues of FOOD PACKER. 75¢ per copy. Order from . . . FOOD PACKER, 139 N. Clark St., Chicago 2, Ill.

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Quality Control

(*Continued from Page 33*)

be used to evaluate the color of the cut surface of individual tomatoes. Color lines were established: minimum No. 1 color is 48 and minimum No. 2 color is 84.

2. The Model F instrument can be used to evaluate the color of the juice of pulp extracted from a given sample of raw tomatoes. The color lines for this instrument are: minimum No. 1 is 42.0 and minimum No. 2 is 77.5.

From a practical standpoint the Agtron Model E might best serve as a bench mark from the grower's standpoint since the original tomato has only been cut in half.

However, from a processor's standpoint it is not the color of the individual tomato that is important. Rather, it is the color of the extracted juice or pulp which would appear to provide the most information, at least from a quality control angle, for juice, pulp or catsup during manufacture.

This article was prepared with the cooperation of Dr. James O. Mavis of the Heekin Can Co., Norwood, Ohio.

Equipment used in tests described in the foregoing article:

Daylight Lamps.....Macbeth Corp.
Color Instruments.....Agtron, Inc.
Gardner Laboratory, Inc.

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Sauerkraut Quality

(*Continued from Page 28*)

more than 50 per cent of the samples had salt-acid ranges between 1.10 and 1.49 in the past three years.

For all 5 years there was a much higher percentage of good quality samples in the intermediate salt-acid range than in the extreme ranges. Very few samples yielding ratios above 1.90 were rated 87 or more in the past three years.

The relationship between flavor and salt-acid ratio is somewhat similar to the relationship of total score to salt-acid ratio. Thus in 1954, 4 of 6 samples with salt-acid ratios below 0.89 and 5 of 7 with ratios above 1.90 were scored below 40 in flavor on a 45 point basis and were therefore graded B. In 1953, 4 of 8 samples with salt-acid ratios below 0.99 and all 3 with ratios above 2.00 rated below 40 in flavor. Likewise in 1955 when a total flavor score of 40 was used, 5 of 8 samples with ratios above 1.90 were graded B in that they scored below 35 in flavor, while only 2 of 18 samples in the 1.30 to 1.39 range rated below 35 for flavor.

Similar figures could be shown in the 1932 and 1940 results. However, it should be realized that salt affects factors other than flavor, particularly texture and color. Improperly salted kraut is often defective for reasons other than salt-acid balance and properly salted kraut may be defective in other respects.

(*This article will be concluded in the August issue of Food Packer*)

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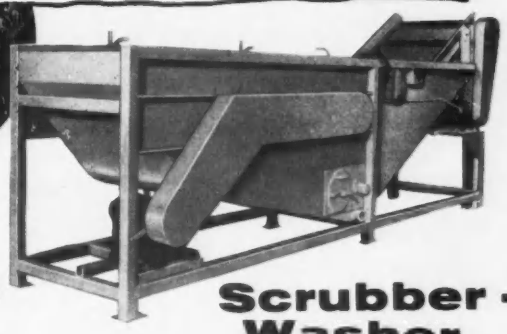
TO REMOVE SAND AND GRIT FROM VEGETABLES FOR FRESH-PACK

Berlin Chapman



SCRUBS
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WASHES

Scrubber - Washer

- Capacity 3 to 5 tons per hour
- Flexible adjustable

Brushes are adjustable to adequately take care of the varying size vegetables as they are being processed. Overall length 12' 6" . . . overall height 4' 9" . . . overall width 2' 7". Belt motor ¼ h.p. and brush motor 1 h.p. Write for new bulletin.

Particularly adaptable for vegetables for fresh pack, here is a machine designed to remove mud, sand and grit from them as they are brought in from the field prior to being graded and sorted. Backed by two years' operating experience, BERLIN CHAPMAN Scrubber Washer has shown the necessity and adaptability of this type of equipment. In operation the vegetables are fed into a soaking section of the Scrubber Washer, then carried between a series of five revolving brushes and one stationary brush to effectively remove all grit, sand or dirt.

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1956

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Gives location of firms, their plants, and products packed in each. Full commodity index. Membership in N.C.A. indicated.

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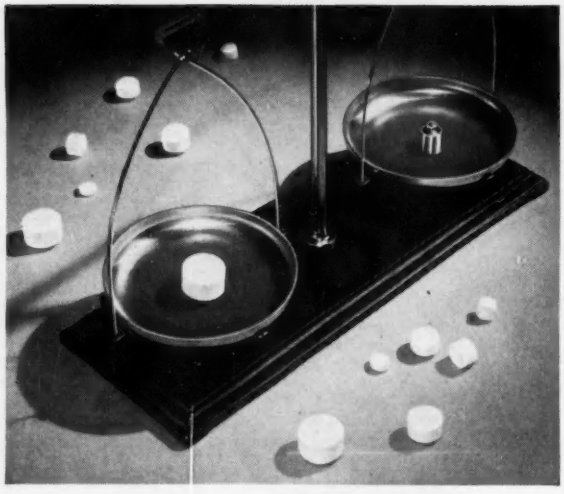
When quality is important . . .

Scienco Salt Tablets



Give You Exactly What You Need For Accurate Flavor Control

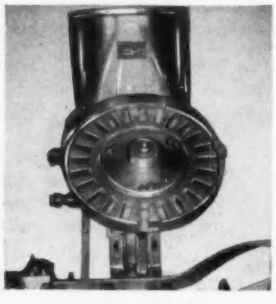
Too much salt, or not enough salt can throw flavor out of balance. That's why the makers of Scienco Salt Tablets constantly check and re-check weight of tablets for accuracy.

Because they are accurately made under continually controlled precision production methods, Scienco Salt Tablets contain the exact weight of high-purity Morton '999' Salt you want for accurate flavoring. Available in 10-grain to 400-grain sizes, Scienco Salt Tablets end hit-or-miss salt depositing . . . make it possible for you to order Morton Salt blended to your own specifications with other ingredients—calcium chloride, MSG, etc.

For faster, more accurate salting

Cut labor costs with a Salt Tablet Depositor. Automatically deposits a Scienco Salt Tablet in as many as 700 cans a minute! Guarantees accuracy—works on a "no can, no tablet" and a "no tablet, line stops" basis.

For more information about Scienco Salt Tablets and the Tablet Depositor, or about the other services and types of salt we offer to canners, write:



SCIENTIFIC SALTING COMPANY
Division of
MORTON SALT COMPANY
Dept. FPa-7, 1530 Hadley Street, St. Louis 1, Mo.

Man-Of-The-Month

Joseph Blumlein
President
S&W Fine Foods, Inc.

On May 1, 1956 a new president of S&W Fine Foods, Inc., was announced. Adrein Falk, who had headed the company for six years, announced his retirement from the San Francisco food packing and distributing firm. Into his place from the executive vice-presidency came 43-year-old Joseph Blumlein.

Who is this man?

As new president, Joseph Blumlein has 23 years of company experience. Into these years are crammed several jobs and many activities.

In 1933 he joined the sales department. This was immediately after his graduation from Stanford University where he was a Phi Beta Kappa.

He served two years as assistant manager of the coffee department and five years as manager of the export department. He became a director in 1940 and was made executive vice-president in 1946. During this period he was absent for four years while serving with the office of the Quartermaster General, U. S. Army.

In recent years Mr. Blumlein has worked to expand S&W's export market. He has traveled in Europe, the Far East and Latin America in this program.

His long experience in the food field and the high caliber of his work with S&W have been recognized by food disitrbutors. He is vice-president and director of the Distributors Association of Northern California, and a governor of the National-American Wholesale Grocers' Association.

His concern with the relationship between processing and distributing food products is a major part of his business philosophy:

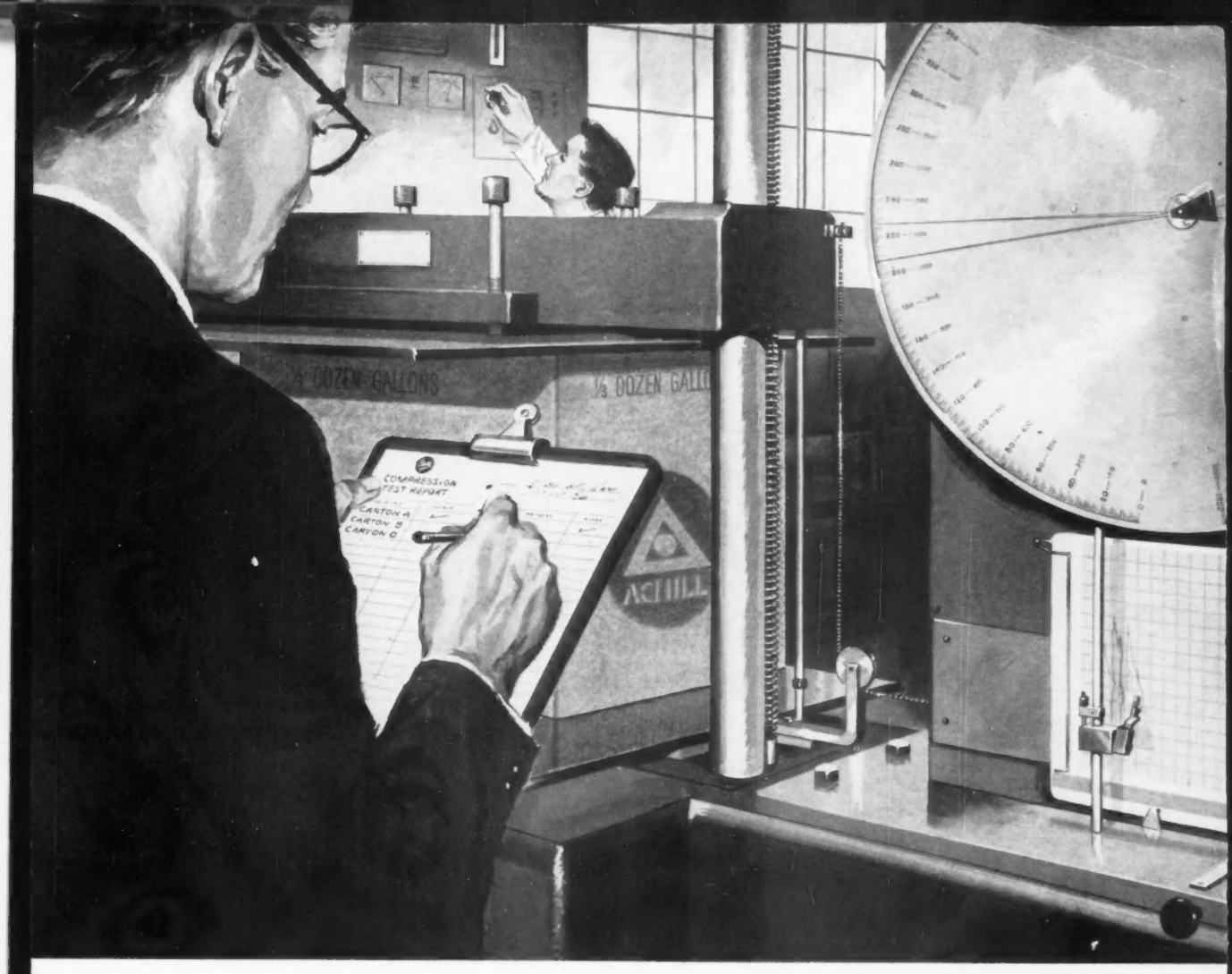
"With S&W as with any food firm the consumer is queen. But we are equally respectful of her prince consort, the dealer, who is in fact the power behind the throne.

"Many factors have a greater influence than price in determining where the housewife does her shopping. Our products, our type of service and our entire merchandising program are geared to her basic appeals for variety and selection. But first and foremost, we impress this fact daily upon our salesmen: The dealer holds the cards."

The name of Joseph Blumlein has become well-known outside the food industry in San Francisco. His interest in social welfare work is based on his desire to strike at the source of social ills through long-term planning and preventative measures on the individual family and community levels.

He is an officer and director of the San Francisco Community Chest and a director of the Mount Zion Hospital.

Mr. Blumlein, who was born in San Francisco on September 3, 1912, is married. He and his wife, the former Jean Seeman Ellis, have two daughters, Ann Claire and Carol Joan.



Ball Brothers' *Personalized* Counsel

can help you cut packaging costs

With operating costs increasing, every dollar saved on packaging is of greater importance than ever. This makes it vital to have shipping cartons for your products which avoid the waste of over-packaging or under-packaging.

Here Ball Brothers' personalized counsel can help you. Ball's practical packaging experts can develop shipping cartons for glass containers which will get your products to market safely . . . with a minimum of expense. For example, using equipment like the compression tester shown above, trained Ball technicians can accurately predict the static load boxes will bear in warehouse stacks or on pallets. This special service has helped many users of Ball quality glass containers and metal closures to cut their costs. It is available to you through your Ball representative.

He can call on Ball's staff of industrial designers, engineers and technicians to aid you in solving your packaging problems . . . container design, processing, filling, shipping cartons, materials handling. These Ball specialists will provide sound practical recommendations that are tailor-made for your operations.

For more information about glass containers, metal closures and "PACKAGING-PLUS" services, write Ball Brothers Company, Dept. FP-76, Muncie, Indiana. Sales offices in all principal cities.

CALL Ball **AND GET MORE THAN GLASS!**

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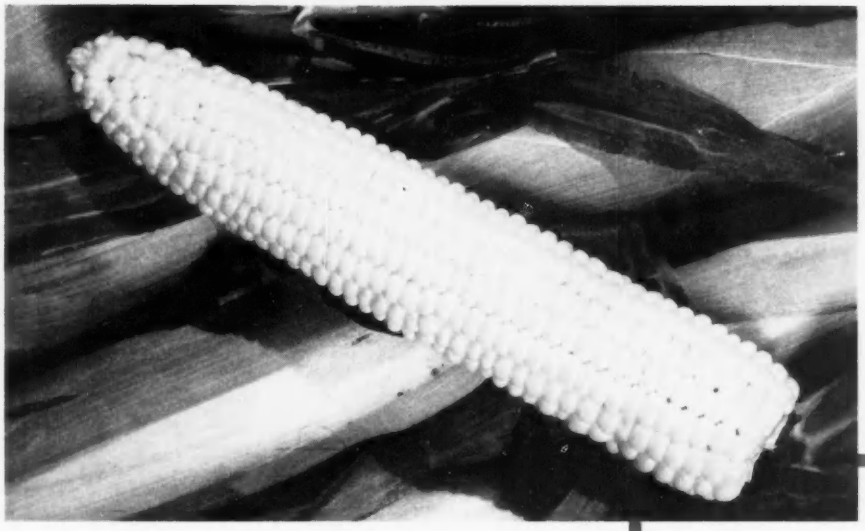
ASGROW GOLDEN 60

an outstanding new hybrid



The returns are in on the first season's performance of this new Asgrow hybrid, and the vote is unanimous:

Asgrow Golden 60 was an outstanding performer wherever it was grown—New York, the Tri-States, the Middle West, and Canada.

Farmers like the heavy tonnage

Packers like the cut-off

Buyers like the pack

Consumers like to eat it!

This new Asgrow hybrid has really clicked. Our supply this spring was quickly sold out, and the early birds have already booked more than half of our supply for 1957. Protect yourself for next spring by booking now!

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